

\* Paul Schulwitz please. Please return all attachments with search results.  
Thanks.

# SEARCH REQUEST FORM

Scientific and Technical Information Center

Access DB#

77803

RECEIVED

OCT 11 2002

(STIC)

Requester's Full Name: MOLLY CEPERLEY Examiner #: 59757 Date: 10/11/02  
Art Unit: 1641 Phone Number 308-4239 Serial Number: 09/740,660  
Mail Box and Bldg/Room Location: CM1-8D15 Results Format Preferred (circle): PAPER DISK E-MAIL  
CM1-7E12

If more than one search is submitted, please prioritize searches in order of need. MEJ

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: Fluorescence immunoassays using organo-metallic complexes

Inventors (please provide full names): for energy transfer

Ganapati R. Mauze, Dan-Hui Yang

Earliest Priority Filing Date: 12/18/00

\*For Sequence Searches Only\* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.

Paul: This one may be hard to search. Please search for claims 1-27. The term "vehicle" may not be that important. Basically, there is some sort of bead (e.g. silica) with a surface coating containing a "donor molecule" ("donor molecules defined in claims 9, 12 + 13 (please search there)). The next layer ("protection layer") is transparent/translucent (clm. 15 + 16) and contains an "acceptor molecule" (clm. 20 + clm. 24 - please search). Then there is a ligand ("specific binding pair member") attached to the "protection layer". The best description may be at page 4, lines 23-33.

Terms:

fluorescence?  
donor  
acceptor  
silica  
sol gel  
FRET (fluorescence resonance energy transfer)  
immunoassay (heterogeneous)  
tetramethoxy silane  
particle  
bead  
encapsulate

organometallic

tailor

tailor

\* The donor-acceptor pairs should be known. Novelty is in putting them on the particle?

## STAFF USE ONLY

POINT OF CONTACT:

Searcher: PAUL SCHULWITZ

Searcher Phone #: CM1 6806 TEL. (703) 305-1954

Searcher Location: \_\_\_\_\_

Date Searcher Picked Up: 10/15

Date Completed: 10/16

Searcher Prep & Review Time: 30

Clerical Prep Time: \_\_\_\_\_

Online Time: 64

## Type of Search

NA Sequence (#) \_\_\_\_\_

AA Sequence (#) \_\_\_\_\_

Structure (#) \_\_\_\_\_

Bibliographic \_\_\_\_\_

Litigation \_\_\_\_\_

Fulltext \_\_\_\_\_

Patent Family \_\_\_\_\_

Other \_\_\_\_\_

## Vendors and cost where applicable

STN 786.99

Dialog \_\_\_\_\_

Questel/Orbit \_\_\_\_\_

Dr. Link \_\_\_\_\_

Lexis/Nexis \_\_\_\_\_

Sequence Systems \_\_\_\_\_

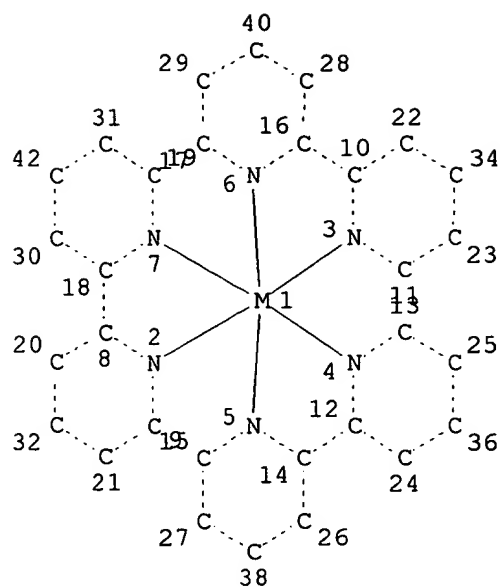
WWW/Internet \_\_\_\_\_

Other (specify) \_\_\_\_\_

=&gt; d que 16

L1

STR



*Considered  
12/13/02  
MEC*

## NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

## GRAPH ATTRIBUTES:

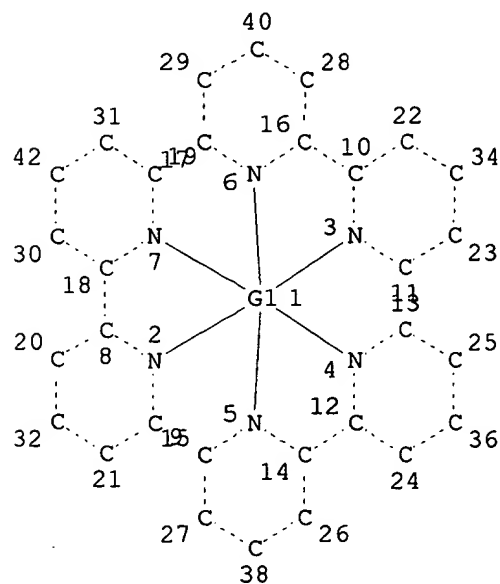
RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 37

## STEREO ATTRIBUTES: NONE

L3 3314 SEA FILE=REGISTRY SSS FUL L1

L4 STR



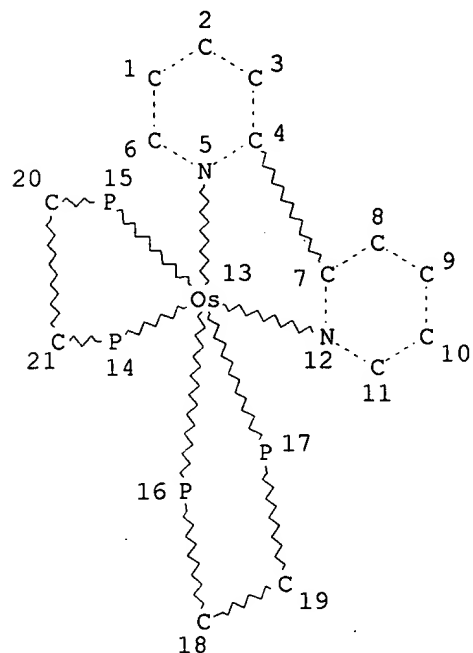
VAR G1=RU/OS/RE  
 NODE ATTRIBUTES:  
 DEFAULT MLEVEL IS ATOM  
 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:  
 RING(S) ARE ISOLATED OR EMBEDDED  
 NUMBER OF NODES IS 37

STEREO ATTRIBUTES: NONE  
 L5 1083 SEA FILE=REGISTRY SUB=L3 SSS FUL L4  
 L6 13 SEA FILE=HCAPLUS ABB=ON PLU=ON L5(L) (DONOR OR ENCAPSUL? OR  
 VESICLE?)

=> d que 110

L7 STR



NODE ATTRIBUTES:  
 DEFAULT MLEVEL IS ATOM  
 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:  
 RING(S) ARE ISOLATED OR EMBEDDED  
 NUMBER OF NODES IS 21

STEREO ATTRIBUTES: NONE  
 L9 15 SEA FILE=REGISTRY SSS FUL L7  
 L10 10 SEA FILE=HCAPLUS ABB=ON PLU=ON L9

=> d que 119

L11 6321 SEA FILE=HCAPLUS ABB=ON PLU=ON CHARGE TRANSFER COMPLEXES+OLD/

CT  
 L12 9575 SEA FILE=HCAPLUS ABB=ON PLU=ON ENCAPSULATION/CT  
 L14 7161 SEA FILE=HCAPLUS ABB=ON PLU=ON ORGANOMETALLIC COMPOUNDS+OLD/C  
 T  
 L18 13456 SEA FILE=HCAPLUS ABB=ON PLU=ON (L11 OR L14)  
 L19 10 SEA FILE=HCAPLUS ABB=ON PLU=ON L18 AND L12

=> d que 137

L11 6321 SEA FILE=HCAPLUS ABB=ON PLU=ON CHARGE TRANSFER COMPLEXES+OLD/  
 CT  
 L13 41967 SEA FILE=HCAPLUS ABB=ON PLU=ON IMMUNOASSAY+OLD,NT/CT  
 L14 7161 SEA FILE=HCAPLUS ABB=ON PLU=ON ORGANOMETALLIC COMPOUNDS+OLD/C  
 T  
 L18 13456 SEA FILE=HCAPLUS ABB=ON PLU=ON (L11 OR L14)  
 L20 28 SEA FILE=HCAPLUS ABB=ON PLU=ON L18 AND L13  
 L22 100136 SEA FILE=HCAPLUS ABB=ON PLU=ON COATING PROCESS/CT  
 L23 245348 SEA FILE=HCAPLUS ABB=ON PLU=ON SILICA/CT  
 L24 4407 SEA FILE=HCAPLUS ABB=ON PLU=ON FLUORESCENCE/CT  
 L25 666 SEA FILE=HCAPLUS ABB=ON PLU=ON ALLOPHYCOCYANINS+OLD/CT  
 L26 13878 SEA FILE=HCAPLUS ABB=ON PLU=ON LIGANDS/CT  
 L27 3346 SEA FILE=HCAPLUS ABB=ON PLU=ON TRANSPARENT FILMS+OLD/CT  
 L28 421 SEA FILE=HCAPLUS ABB=ON PLU=ON "COATING MATERIALS (L)  
 TRAFFIC-MARKING"/CT  
 L29 389 SEA FILE=HCAPLUS ABB=ON PLU=ON "TRANSPARENT MATERIALS (L)  
 COATINGS"/CT  
 L31 67421 SEA FILE=HCAPLUS ABB=ON PLU=ON FLUORESCENCE/CT  
 L32 111916 SEA FILE=HCAPLUS ABB=ON PLU=ON LUMINESCENCE+OLD/CT  
 L33 8 SEA FILE=HCAPLUS ABB=ON PLU=ON L20 AND (L22 OR L23 OR L24 OR  
 L25 OR L26 OR L27 OR L28 OR L29 OR L31 OR L32)  
 L34 13857 SEA FILE=HCAPLUS ABB=ON PLU=ON TRANSPARENT MATERIALS+NT/CT  
 L35 140796 SEA FILE=HCAPLUS ABB=ON PLU=ON ANTIBODIES/CT  
 L36 226116 SEA FILE=HCAPLUS ABB=ON PLU=ON COATING MATERIALS/CT  
 L37 21 SEA FILE=HCAPLUS ABB=ON PLU=ON L20 AND (L22 OR L23 OR L24 OR  
 L25 OR L26 OR L27 OR L28 OR L29 OR L31 OR L32 OR L33 OR L34 OR  
 L35 OR L36)

=> s 16 or 110 or 119 or 137

L43 52 L6 OR L10 OR L19 OR L37

=> s 143 and (111 or 113 or donor or acceptor or charge)

123484 DONOR  
 59025 DONORS  
 158026 DONOR  
 (DONOR OR DONORS)  
 82008 ACCEPTOR  
 33221 ACCEPTORS  
 98032 ACCEPTOR  
 (ACCEPTOR OR ACCEPTORS)  
 411712 CHARGE  
 53527 CHARGES  
 441988 CHARGE  
 (CHARGE OR CHARGES)

L44 43 L43 AND (L11 OR L13 OR DONOR OR ACCEPTOR OR CHARGE)

=> d ibib ab hitstr 1-43

L44 ANSWER 1 OF 43 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 2002:638471 HCAPLUS

TITLE: Driving force and kinetic studies of iodide ion uptake by triphenylpyrylium gallate microcapsules

AUTHOR(S): Komarova, Elena Y.; Ren, Kangtai; Neckers, Douglas C.

CORPORATE SOURCE: Center for Photochemical Sciences, Bowling Green State University, Bowling Green, OH, 43403, USA

SOURCE: Langmuir (2002), 18(20), 7753-7755

CODEN: LANGD5; ISSN: 0743-7463

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The adsorption of I<sup>-</sup> by polystyrene-microencapsulated TPPGa (2,4,6-triphenylpyrylium tetrakis(pentafluorophenyl)gallate) was investigated. The formation of intramol. **charge**-transfer complexes between the triphenylpyrylium cation and I<sup>-</sup> was the driving force of the process. Intraparticular diffusion was the limiting step of the sorption. The microparticulate diffusion coeffs. detd. by 2 different kinetics models were much smaller if compared to analogous no. for chelating resin microbeads. This indicates that the diffusion process is much slower in TPPGa microcapsules.

REFERENCE COUNT: 21 THERE ARE 21 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L44 ANSWER 2 OF 43 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 2002:555537 HCAPLUS

DOCUMENT NUMBER: 137:124200

TITLE: Monoclonal antibodies specific to E2 proteins for passive immunotherapy of hepatitis C virus infection

INVENTOR(S): Fong, Steven K. H.; Hadlock, Kenneth G.; Keck, Zhen-Yong

PATENT ASSIGNEE(S): Board of Trustees of Leland Stanford Junior University, USA

SOURCE: PCT Int. Appl., 152 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002057314	A2	20020725	WO 2001-US45029	20011130
W: AU, CA, JP				
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR				

PRIORITY APPLN. INFO.: US 2000-728720 A 20001201

AB Conformational epitopes of the envelope protein E2 of the Hepatitis C virus (HCV) have been identified and characterized using a panel of monoclonal antibodies derived from patients infected with HCV. These conformational epitopes have been detd. to be important in the immune response of humans to HCV and may be particularly important in neutralizing the virus. Based on the identification of these conformational epitopes, vaccines contg. peptides and mimotopes with these

conformational epitopes intact may be prepd. and administered to patients to prevent and/or treat HCV infection. The identification of four distinct groups of monoclonal antibodies with each directed to a particular epitope of E2 may be used to stratify patients based on their response to HCV and may be used to det. a proper treatment regimen.

L44 ANSWER (3 OF 43) HCAPLUS COPYRIGHT 2002 ACS  
 ACCESSION NUMBER: 2002:466633 HCAPLUS  
 DOCUMENT NUMBER: 137:30244  
 TITLE: Fluorescence immunoassays using organo-metallic complexes for energy transfer  
 INVENTOR(S): ~~Mauze, Ganapati R.~~; Yang, Dan-hui  
 PATENT ASSIGNEE(S): USA  
 SOURCE: U.S. Pat. Appl. Publ., 13 pp.  
 CODEN: USXXCO  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2002076830	A1	20020620	US 2000-740660	20001218

OTHER SOURCE(S): MARPAT 137:30244

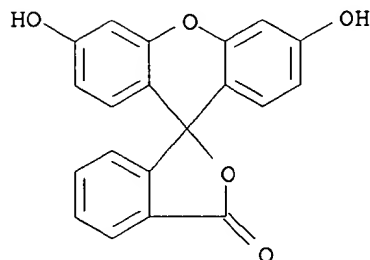
AB The invention includes a compn. of matter and method that utilizes energy transfer between one or more **donor** and **acceptor** mols. The compn. of matter includes an encapsulation vesicle having a matrix, a surface coating of an organo-metallic complex and a transparent protection layer. The transparent protection layer is capable of modification by addn. of biomols. to the surface in order to bind other mols. The proximity of the bound biomols. to the protective layer allows for energy transfer from a **donor** mol. internal to the protection layer to an **acceptor** mol. outside the protection layer. The protection layer acts to diminish the effects of collisional quenching on the **donor** mols. caused by ubiquitous small mols. such as mol. oxygen. The application also teaches a method of making and applying the complexes to immunoassays.

IT 2321-07-5, Fluorescein

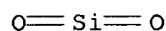
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses) (fluorescence immunoassays using organometallic complexes for energy transfer)

RN 2321-07-5 HCAPLUS

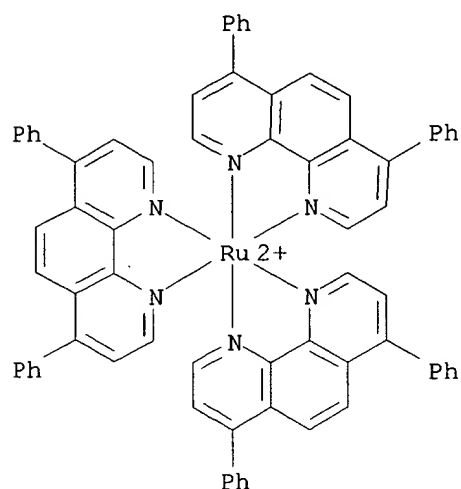
CN Spiro[isobenzofuran-1(3H),9'-[9H]xanthen]-3-one, 3',6'-dihydroxy- (9CI) (CA INDEX NAME)



IT 7631-86-9, Silica, uses 63373-04-6D, compds., conjugates  
 with **encapsulation vesicle**  
 RL: ARG (Analytical reagent use); TEM (Technical or engineered material  
 use); ANST (Analytical study); USES (Uses)  
 (fluorescence immunoassays using organometallic complexes for energy  
 transfer)  
 RN 7631-86-9 HCAPLUS  
 CN Silica (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



RN 63373-04-6 HCAPLUS  
 CN Ruthenium(2+), tris(4,7-diphenyl-1,10-phenanthroline-.kappa.N1,.kappa.N10)-  
 , (OC-6-11)- (9CI) (CA INDEX NAME)



L44 ANSWER(4) OF 43 HCAPLUS COPYRIGHT 2002 ACS  
 ACCESSION NUMBER: 2001:826003 HCAPLUS  
 DOCUMENT NUMBER: 136:216437  
 TITLE: Hydrogen-bonded capsules in polar, protic solvents  
 AUTHOR(S): Shivanyuk, Alexander; Rebek, Jr., Julius  
 CORPORATE SOURCE: The Skaggs Institute for Chemical Biology and the  
 Department of Chemistry, The Scripps Research  
 Institute, La Jolla, CA, 92037, USA  
 SOURCE: Chemical Communications (Cambridge, United Kingdom)  
 (2001), (22), 2374-2375  
 CODEN: CHCOFS; ISSN: 1359-7345  
 PUBLISHER: Royal Society of Chemistry  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 AB A kinetically stable, dimeric capsule is formed by  
 tetrahydroxyresorcinarene in methanol. It encapsulates tropylium and  
 tetramethylammonium cations.  
 REFERENCE COUNT: 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS  
 RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L44 ANSWER <sup>(5)</sup> OF 43 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 2001:751956 HCAPLUS

DOCUMENT NUMBER: 136:142397

TITLE: First molecular switch encapsulated within the cavities of a zeolite. A dramatic lifetime increase of the **charge**-separated state

AUTHOR(S): Alvaro, Mercedes; Chretien, Michelle N.; Ferrer, Belen; Fornes, Vicente; Garcia, Hermenegildo; Scaiano, J. C.

CORPORATE SOURCE: Instituto de Tecnologia Quimica CSIC-UPV and Departamento de Quimica UPV, Valencia, 46022, Spain

SOURCE: Chemical Communications (Cambridge, United Kingdom) (2001), (20), 2106-2107

CODEN: CHCOFS; ISSN: 1359-7345

PUBLISHER: Royal Society of Chemistry

DOCUMENT TYPE: Journal

LANGUAGE: English

AB A [2]-catenane consisting of a bipyridinium cyclophane and a dioxybenzene macrocyclic polyether has been encapsulated within the supercages of zeolite Y by ship-in-a-bottle synthesis; laser flash photolysis reveals that the **charge**-sepd. species decays in hundreds of microseconds in contrast to the few picoseconds previously reported for the same transient in acetonitrile.

REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L44 ANSWER <sup>(6)</sup> OF 43 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 2001:269090 HCAPLUS

DOCUMENT NUMBER: 134:292057

TITLE: Method for measuring peroxidase by chemiluminescence spectroscopy

INVENTOR(S): Suzuki, Hideaki; Takahashi, Tatsuyoshi; Aratani, Genichiro; Katsuragi, Hisashi; Hosogoe, Mio

PATENT ASSIGNEE(S): Dainichi Seika Kogyo K. K., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001103995	A2	20010417	JP 1999-287199	19991007

OTHER SOURCE(S): MARPAT 134:292057

AB A novel and highly sensitive method is provided for measuring a peroxidase activity in the presence of hydrogen **acceptor** (e.g, hydrogen peroxide) by chemiluminescence spectroscopy. In this method, the peroxidase activity is measured in the presence of hydrogen **acceptor** using a chemiluminescence system in which Rhodamin B is added to a chemiluminescence reagent contg. a **charge** transfer complex of N,N'-di-substituted 9,9'-bisacridinium salt (e.g., N,N'-dimethyl-9,9'-bisacridinium nitrate) and a N,N,-disubstituted carboxylic acid amide compd. (e.g., N,N-dimethylformamide, N,N-di-Me acetamide, N-methyl-2-pyrrolidone) as main components, or a chemiluminescence reagent contg. a **charge** transfer complex of



N,N'-di-substituted 9,9'-bisacridinium salt, a N,N,-disubstituted carboxylic acid amide compd., and a particular aminoalc. compd. as main components. The method is applicable in detecting or quantitating with a high sensitivity an antigen or antibody by an immunoassay, or a nucleic acid by hybridization using peroxidase as a labeling substance.

L44 ANSWER 7 OF 43 HCAPLUS COPYRIGHT 2002 ACS  
 ACCESSION NUMBER: 2001:265329 HCAPLUS  
 DOCUMENT NUMBER: 134:289670  
 TITLE: Colloidal rod particles as nanobar codes  
 INVENTOR(S): Natan, Michael J.; Mallouk, Thomas E.  
 PATENT ASSIGNEE(S): The Penn State Research Foundation, USA  
 SOURCE: PCT Int. Appl., 86 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 4  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001025002	A1	20010412	WO 2000-US27093	20001002
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG EP 1227929 A1 20020807 EP 2000-968555 20001002 R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL				
PRIORITY APPLN. INFO.:			US 1999-157326P	P 19991001
			US 2000-189151P	P 20000314
			US 2000-190247P	P 20000317
			US 2000-194616P	P 20000405
			US 2000-598395	A 20000620
			WO 2000-US27093	W 20001002
AB Freestanding particles comprising a plurality of segments, wherein the particle length is from 10 nm to 50 $\mu$ m and the particle width is from 5 nm to 50 $\mu$ m. Nanobar codes are striped, cylindrical metal shaped nanoparticles whose compn. is varied along the cylinder's length. Like conventional barcodes, whose identity is revealed by differential contrast of black and white stripes, nanobar codes are identified in conventional optical microscopes using the differential reflectivity of adjacent metal stripes: Au has a very different reflectivity than Ag or Pt. Thus, the inventors can make an essentially limitless no. of uniquely identifiable particles, which can be used either as tags (like fluorophores or quantum dots) or as substrates (like a spot on a gene chip or a labeled bead). Examples of multiplexed assays using nanobar codes are given. A highly specific capture chem. is used on nanobar codes to sample particular analytes, and another in which a general capture chem. is used to sample general classes of analytes. Analyte detection using fluorescence and mass spectrometry is described, as is utility for both biol. and environmental samples.				

REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L44 ANSWER 8 OF 43 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 2001:210026 HCAPLUS

DOCUMENT NUMBER: 134:234023

TITLE: Luminescent immunoassay for measuring medullasin using lucigenin **charge** transfer complex

INVENTOR(S): Aoki, Yosuke; Suzuki, Hideaki; Takahashi, Tatsuyoshi; Katsuragi, Hisashi

PATENT ASSIGNEE(S): Dainichi Seika Kogyo K. K., Japan

SOURCE: Jpn. Kokai Tokyo Koho, 12 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001074747	A2	20010323	JP 1999-246443	19990831

OTHER SOURCE(S): MARPAT 134:234023

AB A luminescent immunoassay is provided for measuring medullasin, a serine proteinase present in granulocytes, with a high sensitivity or within a short time. A sample contg. medullasin to be measured is contacted with anti-medullasin antibody (or medullasin) labeled with a luminescence reaction-inducing substance in the presence of anti-medullasin antibody possessing a medullasin-reactive site identical to or different from that of the labeled anti-medullasin antibody. An immunocomplex consisting of a luminescence reaction-inducing substance-labeled antigen-antibody complex formed by an antigen-antibody reaction is isolated. Then, the quantity of medullasin in the sample is detd. by measuring the luminescence intensity generated upon inducing the luminescence reaction by the luminescence reaction-inducing substance in the complex. As a luminescence reaction-inducing substance, a peroxidase enzyme can be used. The luminescence is generated by reacting the enzyme with a chemiluminescence reagent contg. a **charge** transfer complex of N,N'-disubstituted-9,9'-bisacridinium salt (e.g., lucigenin) and a N,N'-disubstituted carboxylic acid amide compd. (e.g., N,N-dimethylformamide, N,N-dimethylacetamide) in the presence of a hydrogen **acceptor** (e.g., hydrogen peroxide).

L44 ANSWER 9 OF 43 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 2001:124726 HCAPLUS

DOCUMENT NUMBER: 134:304620

TITLE: .pi. Level Tuning in a Series of Diimine Ligands Based on Density Functional Theory: Application to Photonic Devices

AUTHOR(S): Albano, G.; Belser, P.; Daul, C.

CORPORATE SOURCE: Institute of Inorganic Chemistry, University of Fribourg, Fribourg, CH-1700, Switz.

SOURCE: Inorganic Chemistry (2001), 40(7), 1408-1413

CODEN: INOCAJ; ISSN: 0020-1669

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Energy- and electron-transfer processes are very important for artificial

photosynthesis and a variety of other applications. [(Bpy)2Ru(PAP)Os(bpy)2]4+ and its oxidized form [(bpy)2Ru(PAP)Os(bpy)2]5+ perform efficient photoinduced energy- and electron-transfer processes, resp. ( $k_{\text{en}} = 5.2 \cdot 10^7 \text{ s}^{-1}$ ,  $k_{\text{el}} = 7.2 \cdot 10^6 \text{ s}^{-1}$ ). The introduction of appropriate **donor** and **acceptor** units on the Ru2+ center can improve the lifetime of the excited state, resulting in a much longer and efficient storage of energy. Nonempirical (d. functional) calcns. and exptl. data were used to predict the best **donor** and **acceptor** ligands for improving electron- and energy-transfer processes. Such a result can be extended to all polynuclear complexes where electronic coupling between the metal centers is very weak.

IT 334700-71-9P 334700-73-1P

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation) (prepn. of ruthenium phenanthroline complexes with electron **donor** and **acceptor** diimine ligands, and correlation between energies of MLCT and HOMO/LUMO of ligands and complexes in study of photoinduced energy- and electron-transfer processes)

RN 334700-71-9 HCAPLUS

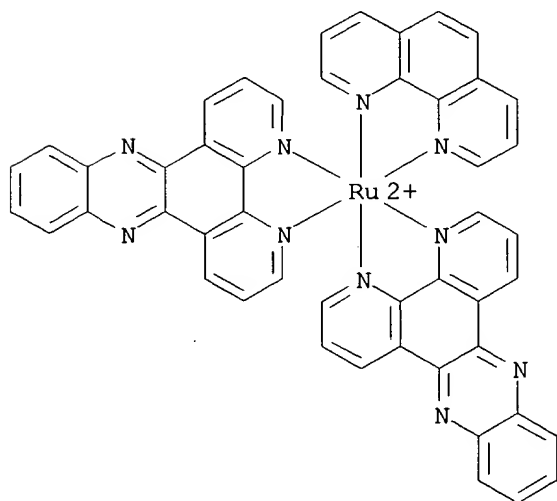
CN Ruthenium(2+), bis(dipyrido[3,2-a:2',3'-c]phenazine-.kappa.N4,.kappa.N5)(1,10-phenanthroline-.kappa.N1,.kappa.N10)-, (OC-6-21)-, bis[hexafluorophosphate(1-)] (9CI) (CA INDEX NAME)

CM 1

CRN 132045-64-8

CMF C48 H28 N10 Ru

CCI CCS

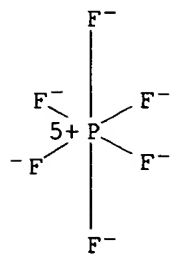


CM 2

CRN 16919-18-9

CMF F6 P

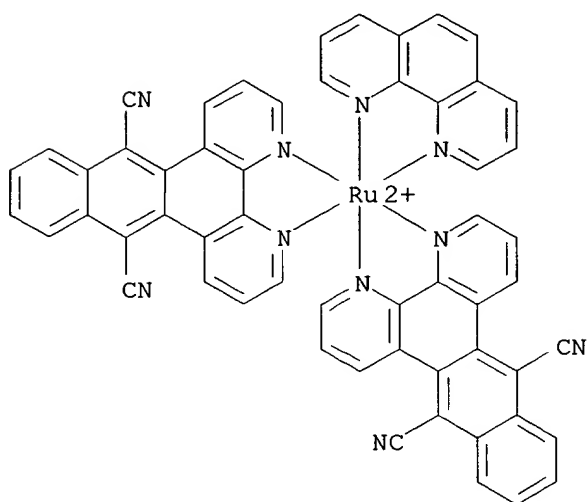
CCI CCS



RN 334700-73-1 HCAPLUS  
 CN Ruthenium(2+), bis(naphtho[2,3-f][1,10]phenanthroline-9,14-dicarbonitrile-.kappa.N4,.kappa.N5) (1,10-phenanthroline-.kappa.N1,.kappa.N10)-, (OC-6-21)-, bis[hexafluorophosphate(1-)] (9CI) (CA INDEX NAME)

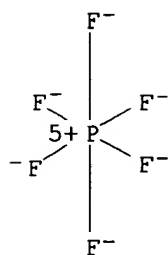
CM 1

CRN 334700-72-0  
 CMF C56 H28 N10 Ru  
 CCI CCS



CM 2

CRN 16919-18-9  
 CMF F6 P  
 CCI CCS



REFERENCE COUNT: 47 THERE ARE 47 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L44 ANSWER (10) OF 43 HCAPLUS COPYRIGHT 2002 ACS  
 ACCESSION NUMBER: 2000:573897 HCAPLUS  
 DOCUMENT NUMBER: 133:174260  
 TITLE: Luminescent metal-ligand complexes  
 INVENTOR(S): Terpetschnig, Ewald A.; Yang, Dan-hui; Owicki, John C.  
 PATENT ASSIGNEE(S): Ljl Biosystems, Inc., USA  
 SOURCE: PCT Int. Appl., 76 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 16  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000047693	A1	20000817	WO 2000-US3589	20000211
W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
US 6258326	B1	20010710	US 1998-156318	19980918
US 2001021514	A1	20010913	US 2001-767583	20010122
PRIORITY APPLN. INFO.:			US 1999-119884P	P 19990212
			US 1999-165813P	P 19991116
			US 1997-59640P	P 19970920
			US 1998-85500P	P 19980514
			US 1998-89848P	P 19980619
			WO 2000-US3589	A1 20000211

OTHER SOURCE(S): MARPAT 133:174260

AB Compns. are described which comprise photoluminescent metal-ligand complexes having a high intrinsic fundamental polarization which are described by the general formulas B-M-L-R1 or R2(R3)M(E1)E2 (M = a long-lifetime luminophor, esp. Ru, Os, or Rh; L = independently selected -C(:O)-(O)m-Q1 groups; m = 0 or 1; Q = alkyl or aryl; R1 = -N:C:S or -NH-C(:S)-NH-P'; R2, R3 = -N:C:S, L-N:C:S, -NH-C(:S)-NH-P', or L-NH-C(:S)-NH-P' for which the L groups are selected independently; P' = proteins, polynucleotides, antibodies, beads, and solid supports; E1 = an electron-withdrawing group; and E2 = H or an electron-withdrawing group).

Use in luminescence assays is indicated. The complexes and/or **acceptors** may be used in free, reactive, and/or conjugated form, alone or mixed with other compds. Preferred luminescence assays include luminescence polarization and luminescence resonance energy transfer assays, among others.

IT 288396-59-8P 288396-63-4P 288396-67-8P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(luminescent metal-ligand complexes)

RN 288396-59-8 HCAPLUS

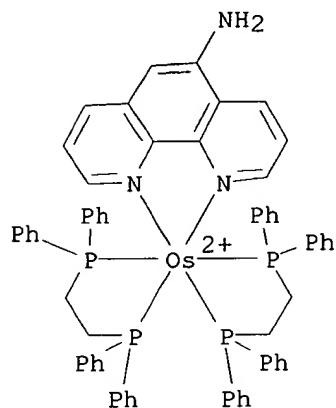
CN Osmium(2+), bis[1,2-ethanediylbis[diphenylphosphine-.kappa.P]] (1,10-phenanthrolin-5-amine-.kappa.N1,.kappa.N10)-, (OC-6-31)-, bis[hexafluorophosphate(1-)] (9CI) (CA INDEX NAME)

CM 1

CRN 288396-58-7

CMF C64 H57 N3 Os P4

CCI CCS

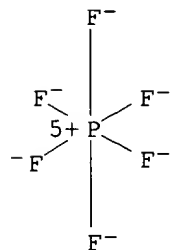


CM 2

CRN 16919-18-9

CMF F6 P

CCI CCS



RN 288396-63-4 HCAPLUS

CN Osmium(2+), bis[1,2-ethenediylbis[diphenylphosphine-.kappa.P]] (1,10-

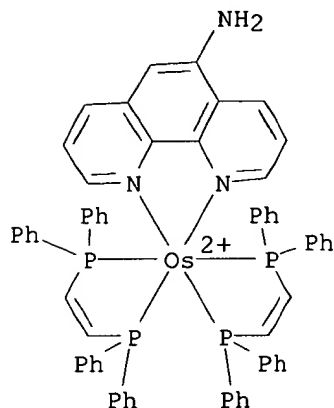
phenanthroline-5-amine-.kappa.N1,.kappa.N10)-, (OC-6-31)-,  
bis[hexafluorophosphate(1-)] (9CI) (CA INDEX NAME)

CM 1

CRN 288396-62-3

CMF C64 H53 N3 Os P4

CCI CCS

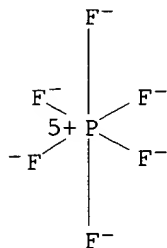


CM 2

CRN 16919-18-9

CMF F6 P

CCI CCS



RN 288396-67-8 HCAPLUS

CN Osmate(6-), (1,10-phenanthroline-5-amine-.kappa.N1,.kappa.N10)bis[[4,4',4'',4'''-[1,2-phenylenedi(phosphinidyne-.kappa.P)]tetrakis[benzenesulfonato]](4-)]-, (OC-6-31)-, sodium hydrogen hexafluorophosphate(1-) (1:4:3:1), mono[hexafluorophosphate(1-)] (9CI) (CA INDEX NAME)

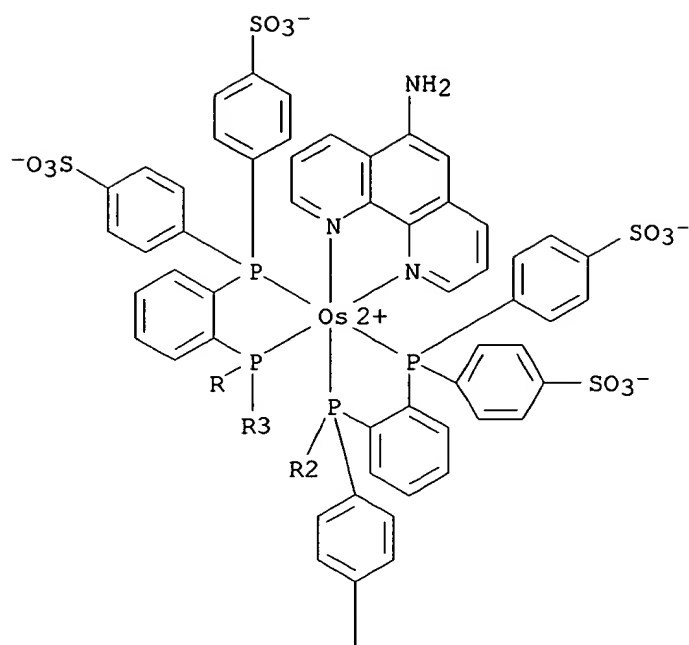
CM 1

CRN 288396-66-7

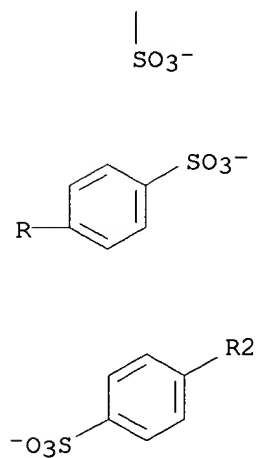
CMF C72 H49 N3 O24 Os P4 S8

CCI CCS

PAGE 1-A

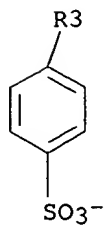


PAGE 2-A





PAGE 3-A

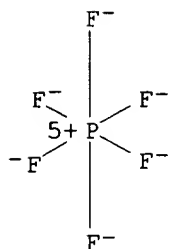


CM 2

CRN 16940-81-1

CMF F6 P . H

CCI CCS



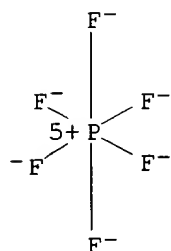
● H<sup>+</sup>

CM 3

CRN 16919-18-9

CMF F6 P

CCI CCS



REFERENCE COUNT:

2

THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L44 ANSWER 11 OF 43 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 2000:383856 HCAPLUS  
 DOCUMENT NUMBER: 133:28249  
 TITLE: ~~A new support for high performance affinity chromatography~~ and other uses  
 INVENTOR(S): Abbott, Nicholas; Stroeve, Pieter; Dubrovsky, Timothy B.; Hou, Zhizhong  
 PATENT ASSIGNEE(S): The Regents of the University of California, USA  
 SOURCE: PCT Int. Appl., 114 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
<u>WO 2000032044</u>	A1	20000608	WO 1999-US28827	19991203

W: CA, JP

RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE

PRIORITY APPLN. INFO.: US 1998-205750 A 19981204

AB Multilayered particulate materials are formed by coating a particulate substrate with a metal and adsorbing an org. layer comprising a recognition moiety onto the metal film. The recognition moiety interacts with an analyte of interest allowing for its detection, purifn., etc. Suitable recognition moiety can be selected from a range of species including, small mols., polymers and biomols. and the like. The novel particulate materials of the invention can be utilized in an array of methods including, ion-exchange, ion-selective ion-exchange, assays, affinity dialysis, size exclusion dialysis, as supports in solid phase synthesis, combinatorial synthesis and screening of compd. libraries and the like.

IT 7631-86-9, Silica, analysis

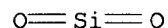
RL: ARU (Analytical role, unclassified); NUU (Other use, unclassified);

ANST (Analytical study); USES (Uses)

(a new support for high performance affinity chromatog. and other uses)

RN 7631-86-9 HCAPLUS

CN Silica (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L44 ANSWER (12) OF 43 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 2000:344067 HCAPLUS

DOCUMENT NUMBER: 132:345119

TITLE: Multi-array, multi-specific electrochemiluminescence testing

INVENTOR(S): Wohlstadter, Jacob N.; Wilbur, James; Sigal, George; Martin, Mark; Guo, Liang-hong; Fischer, Alan; Leland, Jon

PATENT ASSIGNEE(S): Meso Sclae Technologies, Llc., USA

SOURCE: U.S., 68 pp., Cont.-in-part of U.S. Ser. No. 402,076.  
CODEN: USXXAM

DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 5  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
<u>US 6066448</u>	A	20000523	US 1996-611804	19960306
CA 2213854	AA	19960919	CA 1996-2213854	19960306
CN 1186513	A	19980701	CN 1996-193840	19960306
ZA 9601925	A	19970805	ZA 1996-1925	19960308
<u>US 6207369</u>	B1	20010327	US 1996-715163	19960917
<u>US 6140045</u>	A	20001031	US 1997-814085	19970306
US 2001021534	A1	20010913	US 2001-771796	20010129

PRIORITY APPLN. INFO.:  
 US 1995-402076 A2 19950310  
 US 1995-402277 A2 19950310  
 US 1996-12957P P 19960306  
 US 1996-611804 A2 19960306  
 US 1996-715163 A1 19960917

AB Materials and methods are provided for producing patterned multi-array, multi-sp. surfaces which are electronically excited for use in electrochemiluminescence based tests. Materials and methods are provided for the chem. and/or phys. control of conducting domains and reagent deposition for use in flat panel displays and multiply specific testing procedures. Anti-prostate specific antigen (PSA) antibody immobilized on a patterned gold electrode (prepn. given) was used as an electrochemiluminescent sensor for immunoassay of PSA in serum samples.

REFERENCE COUNT: 18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L44 ANSWER 13 OF 43 HCAPLUS COPYRIGHT 2002 ACS  
 ACCESSION NUMBER: 2000:133778 HCAPLUS  
 DOCUMENT NUMBER: 132:163161  
 TITLE: Chemiluminescence analysis method and chemiluminescence enzyme immunoassay using novel chemiluminescent reagent  
 INVENTOR(S): Suzuki, Hideaki; Takahashi, Kiyoshi; Araya, Gen-ichiro; Katsuragi, Hisashi; Hosogoe, Mio  
 PATENT ASSIGNEE(S): Dainichiseika Color & Chemicals Mfg. Co., Ltd., Japan  
 SOURCE: PCT Int. Appl., 59 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000009626	A1	20000224	WO 1999-JP4401	19990813
W: CA, US				
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
JP 2000063819	A2	20000229	JP 1998-244424	19980814
JP 2000060598	A2	20000229	JP 1998-244428	19980814
JP 2000065831	A2	20000303	JP 1998-244404	19980814
JP 2000178550	A2	20000627	JP 1998-361571	19981218
JP 2000180448	A2	20000630	JP 1998-361569	19981218

JP 2000184899 A2 20000704 JP 1998-361570 19981218  
 CA 2306752 AA 20000224 CA 1999-2306752 19990813  
 EP 1038939 A1 20000927 EP 1999-937071 19990813  
 R: CH, DE, FR, GB, IT, LI, NL  
 US 6395503 B1 20020528 US 2000-529546 20000414  
 PRIORITY APPLN. INFO.: JP 1998-244404 A 19980814  
 JP 1998-244424 A 19980814  
 JP 1998-244428 A 19980814  
 JP 1998-361569 A 19981218  
 JP 1998-361570 A 19981218  
 JP 1998-361571 A 19981218  
 WO 1999-JP4401 W 19990813

AB A novel chemiluminescent reagent capable of generating chemiluminescence with peroxide depending on the amt. of peroxidase is described. The chemiluminescent reagent contains as major components a N,N'-disubstituted-9,9'-bisacridinium salt **charge** transfer complex (e.g., N,N'-disubstituted-9,9'-bisacridinium dinitrate, N,N'-disubstituted-9,9'-bisacridinium dihydrochloride, N,N'-disubstituted-9,9'-bisacridinium dihydroiodate), and a N,N-disubstituted carboxamide compd. (e.g., N,N-dimethylformamide, N,N-dimethylacetamide, N-methyl-2-pyrrolidone), optionally together with a specific amino alc. (e.g., monoalkanolamine, dialkanolamine, trialkanolamine). A method is provided for assaying peroxidase activity with a high sensitivity in the presence of peroxide with the use of this reagent. A chemiluminescence enzyme immunoassay method is provided for assaying and quantitating an objective substance with an elevated sensitivity by the use of this reagent. .alpha.-Fetoprotein, prolactin and chorionic gonadotropin were measured with a high sensitivity by this system.

REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L44 ANSWER 14 OF 43 HCAPLUS COPYRIGHT 2002 ACS  
 ACCESSION NUMBER: 2000:15482 HCAPLUS  
 DOCUMENT NUMBER: 132:87440  
 TITLE: Assay method and device  
 INVENTOR(S): Szmazinski, Henry; Chang, Qing  
 PATENT ASSIGNEE(S): Fluorrx, Inc., USA  
 SOURCE: PCT Int. Appl., 24 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000000819	A1	20000106	WO 1999-US14709	19990629
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
AU 9949628	A1	20000117	AU 1999-49628	19990629

PRIORITY APPLN. INFO.:

US 1998-91067P P 19980629

WO 1999-US14709 W 19990629

AB Methods of optically detg. the concn. of an analyte in a sample are described which entail contacting an energy transfer **donor-acceptor** mixt. with a sample to be analyzed in which energy transfer between **donors** and **acceptors** is affected by the changes of the pH within a sensor medium induced by an analyte in the sample, contacting the sensor with a liq. sample, exciting the sensor with intensity modulated radiation, detecting the resulting emission, and performing a calcn. consisting essentially of calcn. of apparent lifetime of the emission to det. the analyte concn. of the sample. The **donor** may be a metal-ligand complex. The **donor** and **acceptor** may be bound to a polymeric carrier. The apparent lifetime may be calcd. using phase-modulation fluorometry or time-resolved fluorometry. The calcd. phase angle and modulation may be used for analyte detn.

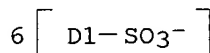
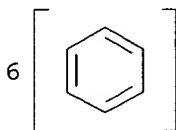
IT 63244-81-5

RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses) (optical assays using pH-sensitive **donor-acceptor** emission)

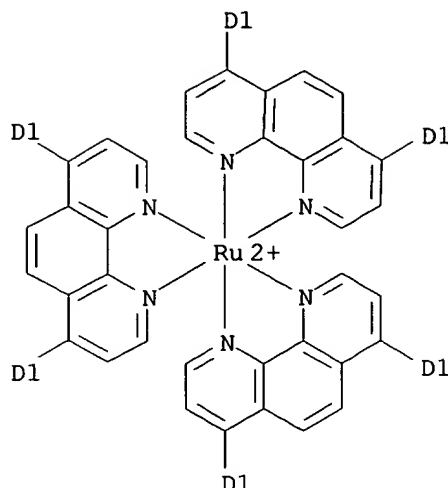
RN 63244-81-5 HCAPLUS

CN Ruthenate(4-), tris[[ (1,10-phenanthroline-4,7-diyl-  
.kappa.N1,.kappa.N10)bis[benzenesulfonato]](2-)]- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 2-A



REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L44 ANSWER 15 OF 43 HCAPLUS COPYRIGHT 2002 ACS  
 ACCESSION NUMBER: 1999:676255 HCAPLUS  
 DOCUMENT NUMBER: 132:12142  
 TITLE: Guest-controlled formation of a hydrogen-bonded molecular capsule  
 AUTHOR(S): Shivanyuk, Alexander; Paulus, Erich F.; Bohmer, Volker  
 CORPORATE SOURCE: Fachbereich Chemie und Pharmazie Abteilung Lehramt  
 Chemie der Universitat, Mainz, D-55099, Germany  
 SOURCE: Angewandte Chemie, International Edition (1999),  
 38(19), 2906-2909  
 CODEN: ACIEF5; ISSN: 1433-7851  
 PUBLISHER: Wiley-VCH Verlag GmbH  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 AB C2v-sym. resorcarene tetraesters contg. four phenolic OH groups solubilize  
 tropylium salts to form dimeric capsules contg. a single tropylium ion and  
 held together by the cooperative action of carbonyl...OH hydrogen bonds  
 and host-guest interactions. The **charge**-transfer character of  
 the host-guest interactions leads to intensely colored orange-red solns.  
 REFERENCE COUNT: 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS  
 RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L44 ANSWER 16 OF 43 HCAPLUS COPYRIGHT 2002 ACS  
 ACCESSION NUMBER: 1999:365085 HCAPLUS  
 DOCUMENT NUMBER: 131:239945  
 TITLE: DNA dynamics by using highly luminescent phosphine  
 complex of osmium(II)  
 AUTHOR(S): Murtaza, Zakir; Malak, Henryk M.; Lakowicz, Joseph R.  
 CORPORATE SOURCE: Cent. Fluorescence Spectroscopy, Dep. Biol. Chem. Mol.  
 Biol., Maryland Biotechnol. Inst., Univ. of Maryland  
 School of Medicine/Baltimore and FluorRx Inc.,  
 Baltimore, MD, USA  
 SOURCE: Proceedings of SPIE-The International Society for  
 Optical Engineering (1999), 3602(Advances in

Fluorescence Sensing Technology IV), 316-325

CODEN: PSISDG; ISSN: 0277-786X

PUBLISHER:

SPIE-The International Society for Optical Engineering

DOCUMENT TYPE:

Journal

LANGUAGE:

English

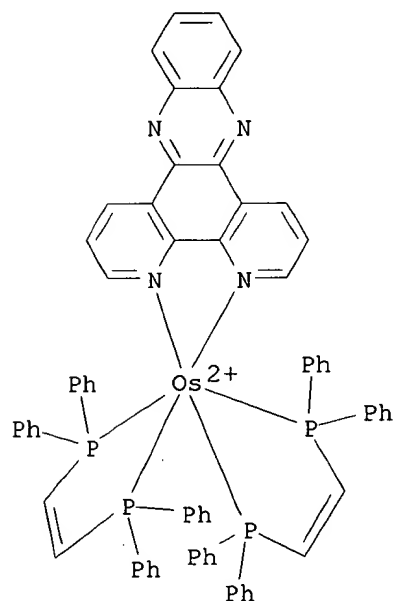
AB A new highly luminescent 'mol. light switch' has been prepd. using osmium (II) metal and nonchromophoric phosphine (dppe) and chromophoric (dppz) ligands to study the dynamics of DNA, where dppe is cis-1,2-bis(diphenylphosphino)-ethylene and dppz is dipyrdo[3,2-a:2',3'-c]phenazine. The complex,  $[\text{Os}(\text{dppe})_2(\text{dppz})]^{2+}$ , shows a quantum yield in acetonitrile about twofold larger than analogous ruthenium compd.,  $[\text{Ru}(\text{bpy})_2(\text{dppz})]^{2+}$ . The anisotropy of  $[\text{Os}(\text{dppe})_2(\text{dppz})]^{2+}$  was found to be near 0.2 at -60.degree. in glycerol. This compd. emits at 610 nm on exciting at metal to ligand **charge** transfer (MLCT) band (390 nm). The lifetimes are 550 and 315 ns in argon and air equilibrated acetonitrile samples resp. This new class of fluorophore using MLCT complex is useable for measurement of DNA dynamics over a larger time scales, which is not possible with conventional DNA dyes, such as ethidium bromide or acridine derivs.

IT 195988-56-8P 195988-57-9P

RL: ARG (Analytical reagent use); PRP (Properties); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation); USES (Uses)  
(DNA dynamics by using highly luminescent phosphine complex of osmium(II))

RN 195988-56-8 HCAPLUS

CN Osmium(2+), bis[1,2-ethenediylbis[diphenylphosphine-.kappa.P]] (dipyrdo[3,2-a:2',3'-c]phenazine-.kappa.N4,.kappa.N5)-, (OC-6-24)- (9CI) (CA INDEX NAME)

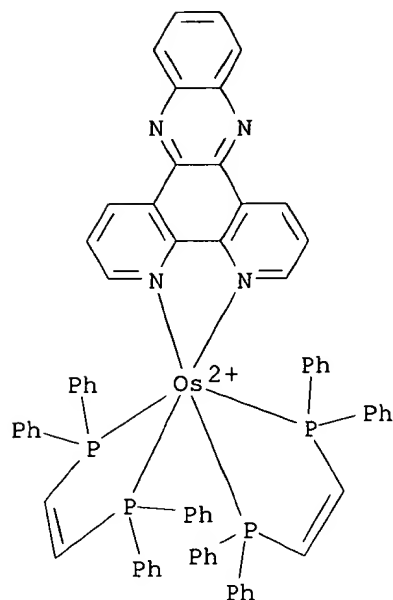


RN 195988-57-9 HCAPLUS

CN Osmium(2+), bis[1,2-ethenediylbis[diphenylphosphine-.kappa.P]] (dipyrdo[3,2-a:2',3'-c]phenazine-.kappa.N4,.kappa.N5)-, (OC-6-24)-, bis[hexafluorophosphate(1-)] (9CI) (CA INDEX NAME)

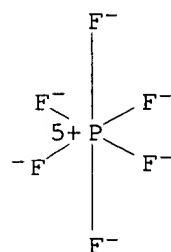
CM 1

CRN 195988-56-8  
CMF C70 H54 N4 Os P4  
CCI CCS



CM 2

CRN 16919-18-9  
CMF F6 P  
CCI CCS



REFERENCE COUNT: 59 THERE ARE 59 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L44 ANSWER 17 OF 43 HCAPLUS COPYRIGHT 2002 ACS  
ACCESSION NUMBER: 1999:359730 HCAPLUS  
DOCUMENT NUMBER: 131:16096  
TITLE: Improvements in or relating to electrochemical assays



INVENTOR(S): Porter, Robert Andrew; Badley, Robert Andrew  
 PATENT ASSIGNEE(S): Unilever PLC, UK; Unilever N.V.  
 SOURCE: PCT Int. Appl., 78 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9927356	A1	19990603	WO 1998-GB3495	19981123
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
CA 2311165	AA	19990603	CA 1998-2311165	19981123
AU 9912489	A1	19990615	AU 1999-12489	19981123
EP 1032825	A1	20000906	EP 1998-955758	19981123
R: CH, DE, ES, FR, GB, IT, LI, NL, SE, IE				
JP 2002510032	T2	20020402	JP 2000-522444	19981123
PRIORITY APPLN. INFO.: EP 1997-309425 A 19971121				
WO 1998-GB3495 W 19981123				

OTHER SOURCE(S): MARPAT 131:16096

AB Disclosed is a component for a device for detecting the presence of an analyte of interest in a sample, the component comprising an elec. conducting solid support having immobilized thereon a chem. moiety, said chem. moiety comprising an electroactive portion with an electrochem. property capable of being directly modulated in a detectable manner by the binding thereto of a binding partner having a specific binding activity for the electroactive portion, together with app. comprising the component, and a method of detecting the presence of an analyte of interest. Prepn. of electrode surfaces is described in the example.

REFERENCE COUNT: 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L44 ANSWER 18 OF 43 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1999:141295 HCAPLUS

DOCUMENT NUMBER: 130:207005

TITLE: Novel compound, 2-amino-3-[2-( $\alpha$ -mannopyranosyl)indol-3-yl]propionic acid, its preparation method and the method for inspecting the function of a living body with the compound.

INVENTOR(S): Kohno, Hiroaki; Okabe, Kazuaki; Yonekawa, Osamu; Fujise, Hiroshi; Horiuchi, Kentaro; Adachi, Kyoko; Sano, Hiroshi; Suzuki, Koji

PATENT ASSIGNEE(S): Kyowa Medex Co., Ltd., Japan; Marine Biotechnology Institute Co., Ltd.

SOURCE: PCT Int. Appl., 69 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

## PATENT INFORMATION:

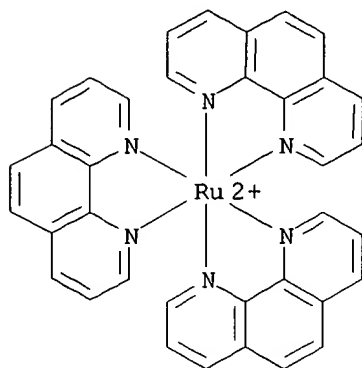
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9909411	A1	19990225	WO 1998-JP3671	19980819
W: AU, BG, BR, CA, CN, CZ, HU, IL, JP, KR, MX, NO, NZ, PL, RO, SG, SI, SK, UA, US, VN, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
CA 2300913	AA	19990225	CA 1998-2300913	19980819
AU 9887471	A1	19990308	AU 1998-87471	19980819
EP 1016866	A1	20000705	EP 1998-938893	19980819
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
PRIORITY APPLN. INFO.:			JP 1997-224065	A 19970820
			WO 1998-JP3671	W 19980819
OTHER SOURCE(S): MARPAT 130:207005				
AB A novel in vivo compd., 2-amino-3-[2-(.alpha.-mannopyranosyl)indol-3-yl]propionic acid is prepd. A method is described for inspecting the function of a living body by quant. detg. this compd. in a sample taken from a living body. An antibody specifically reactive with this compd. is produced. Hybridoma producing this antibody is established. An immunol. method is described for detg. this compd. in a sample with this antibody. A process is established for prepg. this compd. and its derivs. A successful example is shown with the inspection of kidney function by measuring glomerular filtration rate based on the detn. of this compd. using enzyme immunoassay with monoclonal antibody produced to this compd. in hybridoma.				
REFERENCE COUNT: 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT				
L44 ANSWER 19 OF 43 HCAPLUS COPYRIGHT 2002 ACS				
ACCESSION NUMBER: 1998:229606 HCAPLUS				
DOCUMENT NUMBER: 128:267849				
TITLE: Binding of luminescent ruthenium(II) molecular probes to vesicles				
AUTHOR(S): Jain, Ajay; Xu, Wenying; Demas, J. N.; DeGraff, B. A.				
CORPORATE SOURCE: Departments of Chemistry, University of Virginia, Charlottesville, VA, 22904, USA				
SOURCE: Inorganic Chemistry (1998), 37(8), 1876-1879				
CODEN: INOCAJ; ISSN: 0020-1669				
PUBLISHER: American Chemical Society				
DOCUMENT TYPE: Journal				
LANGUAGE: English				
AB A systematic study of the binding of luminescent Ru(II) complexes with .alpha.-diimine ligands (2,2'-bipyridine, 1,10-phenanthroline, and substituted analogs) to neutral (1-palmitoyl-2-oleoyl-sn-glycero-3-phosphocholine) and anionic [phospholipid was L-.alpha.-phosphatidylserine (Brian; sodium salt)] unilamellar vesicles is presented. Excited state lifetime measurements coupled with <u>differential oxygen quenching</u> of the bound and unbound complex provide a quant. measure of binding. The role of <b>charge</b> and complex hydrophobicity are examd. in regard to binding strength. Binding is strongly dependent on electrostatic attraction, but hydrophobic interactions are equally important and can enhance binding by orders of magnitude. These results provide criteria and guidelines for the design of luminescent inorg. mol. probes for use in biol. and, esp., membrane systems.				

IT 14767-24-9 15672-79-4 75213-31-9  
 205516-93-4 205518-08-7 205518-09-8  
 RL: ANT (Analyte); ANST (Analytical study)  
 (binding of luminescent ruthenium(II) mol. probes to vesicles)

RN 14767-24-9 HCAPLUS  
 CN Ruthenium(2+), tris(1,10-phenanthroline-.kappa.N1,.kappa.N10)-,  
 (OC-6-11)-, diperchlorate (9CI) (CA INDEX NAME)

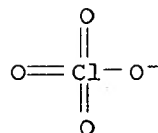
CM 1

CRN 22873-66-1  
 CMF C36 H24 N6 Ru  
 CCI CCS



CM 2

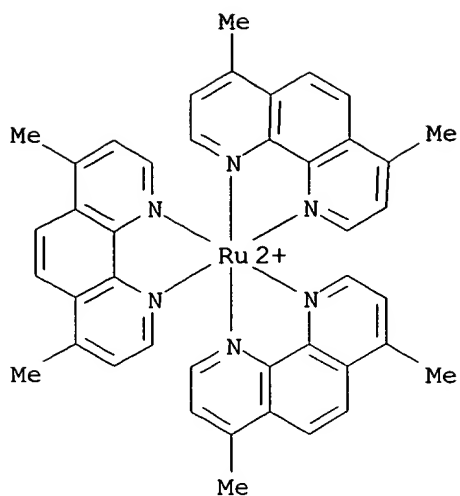
CRN 14797-73-0  
 CMF Cl O4



RN 15672-79-4 HCAPLUS  
 CN Ruthenium(2+), tris(4,7-dimethyl-1,10-phenanthroline-.kappa.N1,.kappa.N10)-,  
 (OC-6-11)-, diperchlorate (9CI) (CA INDEX NAME)

CM 1

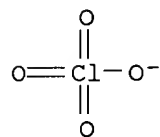
CRN 24414-00-4  
 CMF C42 H36 N6 Ru  
 CCI CCS



CM 2

CRN 14797-73-0

CMF Cl O4



RN 75213-31-9 HCAPLUS

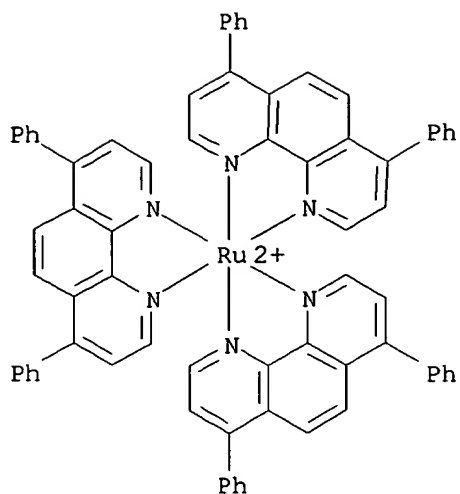
CN Ruthenium(2+), tris(4,7-diphenyl-1,10-phenanthroline-.kappa.N1,.kappa.N10)-  
 , (OC-6-11)-, diperchlorate (9CI) (CA INDEX NAME)

CM 1

CRN 63373-04-6

CMF C72 H48 N6 Ru

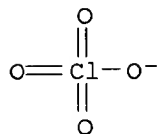
CCI CCS



CM 2

CRN 14797-73-0

CMF Cl O4



RN 205516-93-4 HCAPLUS

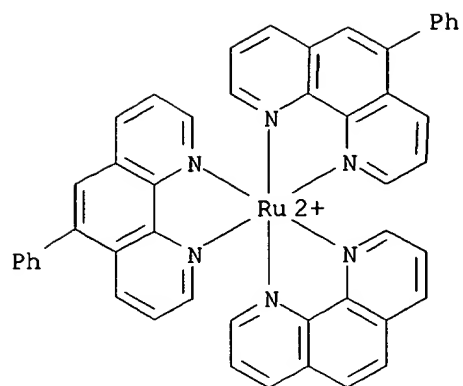
CN Ruthenium(2+), (1,10-phenanthroline-.kappa.N1,.kappa.N10)bis(5-phenyl-1,10-phenanthroline-.kappa.N1,.kappa.N10)-, diperchlorate (9CI) (CA INDEX NAME)

CM 1

CRN 159339-30-7

CMF C48 H32 N6 Ru

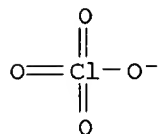
CCI CCS



CM 2

CRN 14797-73-0

CMF Cl O4



RN 205518-08-7 HCAPLUS

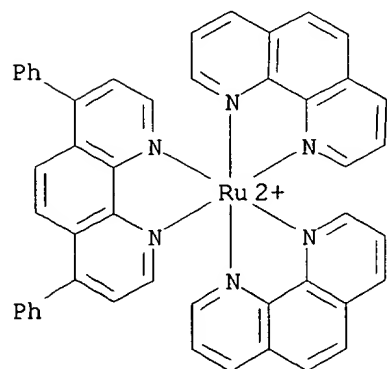
CN Ruthenium(2+), (4,7-diphenyl-1,10-phenanthroline-  
 .kappa.N1,.kappa.N10)bis(1,10-phenanthroline-.kappa.N1,.kappa.N10)-,  
 (OC-6-22)-, diperchlorate (9CI) (CA INDEX NAME)

CM 1

CRN 63373-03-5

CMF C48 H32 N6 Ru

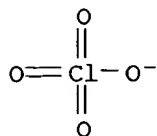
CCI CCS



CM 2

CRN 14797-73-0

CMF Cl O4



RN 205518-09-8 HCAPLUS

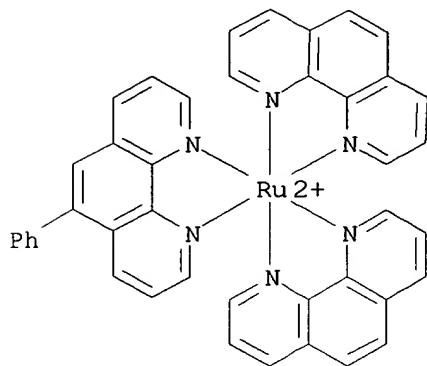
CN Ruthenium(2+), bis(1,10-phenanthroline-.kappa.N1,.kappa.N10)(5-phenyl-1,10-phenanthroline-.kappa.N1,.kappa.N10)-, (OC-6-33)-, diperchlorate (9CI)  
(CA INDEX NAME)

CM 1

CRN 93503-35-6

CMF C42 H28 N6 Ru

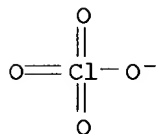
CCI CCS



CM 2

CRN 14797-73-0

CMF Cl O4



L44 ANSWER 20 OF 43 HCAPLUS COPYRIGHT 2002 ACS  
ACCESSION NUMBER: 1997:618106 HCAPLUS

DOCUMENT NUMBER: 127:275016  
TITLE: Electrochemiluminescent labels having improved nonspecific binding properties  
INVENTOR(S): Leland, Jonathan K.; Gudibande, Satyanarayana R.; Shen, Lihong  
PATENT ASSIGNEE(S): Igen International, Inc., USA  
SOURCE: PCT Int. Appl., 132 pp.  
CODEN: PIXXD2  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9732886	A1	19970912	WO 1997-US4150	19970306
W: AL, AM, AT, AU, AZ, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TR, TT, UA, UG, UZ, VN, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, KE, LS, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
AU 9725309	A1	19970922	AU 1997-25309	19970306
PRIORITY APPLN. INFO.:			US 1996-586627	19960306
			WO 1997-US4150	19970306

OTHER SOURCE(S): MARPAT 127:275016

AB The present invention is directed to modified electrochemiluminescent compds. and to assocd. processes for performing assays, e.g., heterogeneous electrochemiluminescence immunoassays, using these compds. wherein, in comparison to their corresponding unmodified counterparts, these compds. have decreased nonspecific binding properties. Examples are given for the detn. of, e.g., digoxin, theophylline, DNA, etc. in various samples including body fluids.

L44 ANSWER 21 OF 43 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1996:672712 HCAPLUS  
DOCUMENT NUMBER: 125:322311  
TITLE: Multi-array, multi-specific electrochemiluminescence testing  
INVENTOR(S): Wohlstadter, Jacob; Wilbur, James; Sigal, George; Martin, Mark; Guo, Liang-Hong; Fischer, Alan; Leland, Jon  
PATENT ASSIGNEE(S): Meso Scale Technologies, Llc, USA  
SOURCE: PCT Int. Appl., 221 pp.  
CODEN: PIXXD2  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 5  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9628538	A1	19960919	WO 1996-US3190	19960306
W: AL, AM, AT, AU, AZ, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LS, LT,				



LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE,  
SG, SI  
RW: KE, LS, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR,  
IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML  
CA 2213854 AA 19960919 CA 1996-2213854 19960306  
AU 9654205 A1 19961002 AU 1996-54205 19960306  
AU 720625 B2 20000608  
BR 9607193 A 19971111 BR 1996-7193 19960306  
EP 821726 A1 19980204 EP 1996-911269 19960306  
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,  
IE, LT, LV, FI  
CN 1186513 A 19980701 CN 1996-193840 19960306  
JP 11502617 T2 19990302 JP 1996-527737 19960306  
ZA 9601925 A 19970805 ZA 1996-1925 19960308  
US 6140045 A 20001031 US 1997-814085 19970306  
PRIORITY APPLN. INFO.:  
US 1995-402076 A 19950310  
US 1995-402277 A 19950310  
US 1996-12957P P 19960306  
WO 1996-US3190 W 19960306

AB The invention relates to a cassette for conducting electrochemiluminescence (ECL) reactions and assays comprising a plurality of discrete binding domains immobilized on a support, the discrete binding domains being spatially aligned with .gtoreq.1 electrode and .gtoreq.1 counterelectrode pairs. The cassette preferably includes a first support having a plurality of discrete binding domains immobilized on the surface. It may have .gtoreq.1 electrode and .gtoreq.1 counterelectrode pairs. The electrode and counterelectrode pairs are sep. addressable by a source of elec. energy in the form of a voltage waveform effective to trigger ECL. The invention relates further to methods for using the cassettes for measuring ECL in a sample by contacting the plurality of binding domains of a cassette with a sample that contains a plurality of analytes of interest, under ECL assay conditions, and then applying a voltage waveform effective to trigger ECL at each of the plurality of electrode and counterelectrode pairs and detecting or measuring the triggered ECL. The invention also provides kits for performing the assays. Examples are given of the detection of .alpha.-fetoprotein, TSH, and prostate-specific antigen.

L44 ANSWER <sup>22</sup> OF 43 HCAPLUS COPYRIGHT 2002 ACS  
ACCESSION NUMBER: 1996:404715 HCAPLUS  
DOCUMENT NUMBER: 125:51359  
TITLE: Direct hapten diagnosis  
INVENTOR(S): Kadouche, Jean; Samake, Hamidou; Goumard, Philippe  
PATENT ASSIGNEE(S): Gks Technologies, Fr.  
SOURCE: PCT Int. Appl., 39 pp.  
CODEN: PIXXD2  
DOCUMENT TYPE: Patent  
LANGUAGE: French  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9610179	A1	19960404	WO 1995-FR1259	19950928
W: CA, JP, US				
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
FR 2725023	A1	19960329	FR 1994-11601	19940928

FR 2725023 B1 19970131  
 CA 2195328 AA 19960404 CA 1995-2195328 19950928  
 PRIORITY APPLN. INFO.: FR 1994-11601 19940928  
 AB A device is described for rapidly assaying and characterizing the presence of a mol. with a mol. wt. of <10,000 Da, i.e., a hapten (esp. a drug or a drug of abuse) in a liq. sample (e.g., body fluid), said device consisting of a ~~hydrophilic~~ support enabling capillary migration of a liq. therein and having a plurality of sep. regions in which the reagents are deposited and/or dried. The device consists of at least the following portions: (1) a receiving portion for the sample to be tested; (2) a reservoir portion contg. a conjugate that is both marked with a marker enabling direct detection thereof and also is a ligand for the mol. to be assayed, portions 1 and 2 being superimposed or sequential; (3) two successive barriers consisting of affinity pair moieties of which one, known as a neg. reading barrier, retains said conjugate during migration thereof over the support when the desired mol. is not present in the sample, while the other retains said conjugate when the desired mol. is present, in which case said mol. is directly or indirectly bound to said conjugate, and said second barrier is known as a pos. reaction reading zone; and (4) an absorptive portion arranged adjacent to the hydrophilic support for promoting liq. flow from the sample-receiving portion (1) through the other portions that make up the device.

L44 ANSWER 23 OF 43 HCAPLUS COPYRIGHT 2002 ACS  
 ACCESSION NUMBER: 1996:380241 HCAPLUS  
 DOCUMENT NUMBER: 125:81305  
 TITLE: Small organometallic probes  
 INVENTOR(S): Hainfeld, James F.; Leone, Robert D.; Furuya, Frederic R.; Powell, Richard D.  
 PATENT ASSIGNEE(S): Nanoprobes, Inc., USA  
 SOURCE: U.S., 13 pp.  
 CODEN: USXXAM  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 3  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5521289	A	19960528	US 1994-282929	19940729
US 5728590	A	19980317	US 1996-652007	19960523
US 6121425	A	20000919	US 1998-39601	19980316
US 6369206	B1	20020409	US 2000-619343	20000719

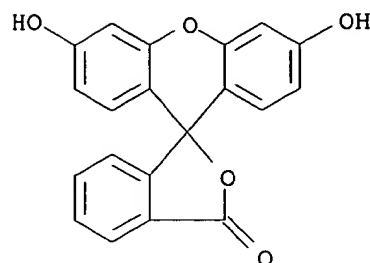
PRIORITY APPLN. INFO.:  
 US 1994-282929 A2 19940729  
 US 1996-652007 A2 19960523  
 US 1998-39601 A1 19980316

AB Small organometallic probes comprise a core of metal atoms bonded to org. moieties. The metal atoms are gold, silver, platinum, palladium, or combinations thereof. In one embodiment, a multifunctional organometallic probe comprises a core of metal atoms surrounded by a shell of org. moieties covalently attached to the metal atoms, a fluorescent mol., e.g., fluorescein, covalently attached to one of the org. moieties, and a targeting mol., e.g., an antibody, covalently attached to another of the org. moieties.

IT 2321-07-5DP, organometallic probes contg.  
 RL: ARG (Analytical reagent use); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation); USES (Uses)

(small organometallic probes for biochem. anal.)

RN 2321-07-5 HCAPLUS  
CN Spiro[isobenzofuran-1(3H),9'-[9H]xanthen]-3-one, 3',6'-dihydroxy- (9CI)  
(CA INDEX NAME)



L44 ANSWER 24 OF 43 HCAPLUS COPYRIGHT 2002 ACS  
ACCESSION NUMBER: 1996:275039 HCAPLUS  
DOCUMENT NUMBER: 124:333934  
TITLE: Selecting ligand agonists and antagonists  
INVENTOR(S): Cunningham, Brian C.; Devos, Abraham M.; Mulkerrin, Michael G.; Ultsch, Mark; Wells, James A.  
PATENT ASSIGNEE(S): Genentech, Inc., USA  
SOURCE: U.S., 42 pp., Cont.-in-part of U.S. Ser. No. 864,120, abandoned.  
CODEN: USXXAM  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 3  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5506107	A	19960409	US 1993-122548	19930929
WO 9221029	A1	19921126	WO 1992-US3743	19920506
W: JP, US				
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LU, MC, NL, SE				
JP 2001270837	A2	20011002	JP 2001-54464	19920506
US 6429186	B1	20020806	US 1994-308879	19940919
PRIORITY APPLN. INFO.:			US 1991-698753	B1 19910510
			US 1992-864120	B2 19920406
			WO 1992-US3743	W 19920506
			JP 1993-500070	A3 19920506
			US 1993-20327	B1 19930219

AB We have discovered that growth hormones form ternary complexes with their receptors in which site 1 on the hormone first binds to one mol. of receptor and then hormone site 2 then binds to another mol. of receptor, thereby producing a 1:2 complex. We believe this phenomenon is shared by other ligands having similar conformational structure. Assays based on this phenomenon are useful for identifying ligand agonists and antagonists. Sites 1 and 2 are structurally identified to facilitate generation of amino acid sequence variants of ternary complex-forming ligands. Novel variants of growth hormone, prolactin placental lactogen and other related ligands are provided. As a result of our studies with the ternary complex we have detd. that selected antibodies to the receptor

for these ligands are capable of acting as ligand agonists or antagonists. Novel growth hormones and novel uses for anti-growth hormone receptor antibodies are described.

L44 ANSWER/25 OF 43 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1995:579031 HCAPLUS

DOCUMENT NUMBER: 122:309835

TITLE: Analysis of Luminescence Quenching on Calf Thymus DNA

AUTHOR(S): Schulman, L. S.; Bossmann, S. H.; Turro, N. J.

CORPORATE SOURCE: Physics Department, Clarkson University, Potsdam, NY, 13699-5820, USA

SOURCE: Journal of Physical Chemistry (1995), 99(22), 9283-92  
CODEN: JPCHAX; ISSN: 0022-3654

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

AB A new model for the calcn. of DNA-mediated (long-range) photoinduced electron transfer is presented. This model uses a phenomenol. approach to describe the interaction of photodonor and electron **acceptor** metal complexes in the presence of DNA and permits the calcn. of characteristic interaction distances for the electron transfer between DNA intercalated species. The binding of two types of metal complexes to DNA is described probabilistically and the d. calcn. of the complexes on DNA is performed according to a random deposition model on a one-dimensional surface. The displacement of one complex species by the other at higher loading densities and the possible formation of supramol. species between different metal complexes in soln. or at the surface of DNA have also been considered. A fit of exptl. data employing photoexcited [Ru(phen)2(dppz)]2+ as electron **donor** and [Rh(phi)2(phen)]3+ as electron **acceptor** has been performed. Using the model presented here, the exptl. results are consistent with DNA-mediated long-range electron transfer occurring over a center-to-center distance of 24 .ANG..

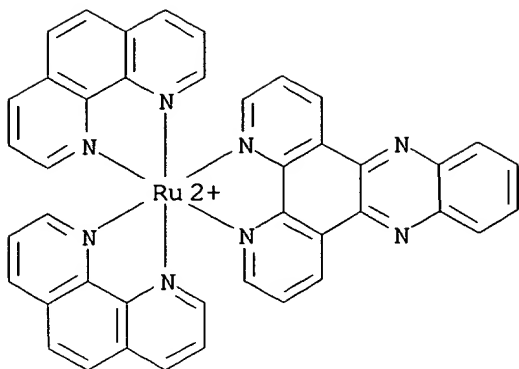
IT 92543-42-5

RL: BPR (Biological process); BSU (Biological study, unclassified); BUU (Biological use, unclassified); BIOL (Biological study); PROC (Process); USES (Uses)

(DNA complexes; new model for the description of electron transfer quenching involving photoexcited metal complexes both as electron **donors** and **acceptors** and with both bound to calf thymus DNA)

RN 92543-42-5 HCAPLUS

CN Ruthenium(2+), (dipyrido[3,2-a:2',3'-c]phenazine-.kappa.N4,.kappa.N5)bis(1,10-phenanthroline-.kappa.N1,.kappa.N10)-, (OC-6-22)- (9CI) (CA INDEX NAME)



L44 ANSWER 26 OF 43 HCAPLUS COPYRIGHT 2002 ACS  
 ACCESSION NUMBER: 1995:516340 HCAPLUS  
 DOCUMENT NUMBER: 122:260570  
 TITLE: Endomodification of proteins by transpeptidation  
 INVENTOR(S): Wagner, Fred W.; Coolidge, Thomas R.  
 PATENT ASSIGNEE(S): Bionebraska, Inc., USA  
 SOURCE: PCT Int. Appl., 47 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9503321	A1	19950202	WO 1994-US8127	19940719
W: AM, AT, AU, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, ES, FI, GB, GE, HU, JP, KE, KG, KP, KR, KZ, LK, LT, LU, LV, MD, MG, MN, MW, NL, NO, NZ, PL, PT, RO, RU, SD, SE, SI, SK, TJ, TT, UA, UZ, VN				
RW: KE, MW, SD, AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
AU 9473382	A1	19950220	AU 1994-73382	19940719
PRIORITY APPLN. INFO.:			US 1993-94819	19930720
			WO 1994-US8127	19940719

AB Means are provided for attaching a label, support, or bioactive agent to a protein at a truncating site within the protein. More specifically, the invention is directed to a method for the attachment of an amino acid, amino acid deriv., peptide, polypeptide, or nucleophile to a protein core obtained from a protein and a leaving group. In one embodiment, an endopeptidase enzyme is utilized to attach a labeled nucleophile to a protein core such as an antibody. Thus, a recombinant fusion protein was produced in *Escherichia coli* comprising a modified truncated glucagon-like peptide 1 (7-34) with an Ala-Phe-Ala tail as leaving group, joined via a selectively cleavable interconnecting peptide (in this case, a Met residue cleavable by CNBr) to human carbonic anhydrase (Met240.fwdarw.Leu), which acts as a binding protein for purifn. by affinity chromatog. with sulfanilamide. The fusion protein was purified, cleaved with CNBr, and the glucagon-like peptide was sepd. and subjected to transpeptidation with trypsin to substitute the Ala-Phe-Ala tail with glycylbiotin. The biotinylated peptide was bound to immobilized avidin for use as an affinity probe for membrane-bound glucagon-like peptide receptors.

L44 ANSWER 27 OF 43 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1994:617380 HCAPLUS

DOCUMENT NUMBER: 121:217380

TITLE: Energy Transfer in the Inverted Region: Calculation of Relative Rate Constants by Emission Spectral Fitting

AUTHOR(S): Murtaza, Zakir; Graff, Darla K.; Zipp, Arden P.; Worl, Laura A.; Jones, Wayne E., Jr.; Bates, W. Douglas; Meyer, Thomas J.

CORPORATE SOURCE: Department of Chemistry, University of North Carolina, Chapel Hill, NC, 27599-3290, USA

SOURCE: Journal of Physical Chemistry (1994), 98(41), 10504-13  
CODEN: JPCHAX; ISSN: 0022-3654

DOCUMENT TYPE: Journal

LANGUAGE: English

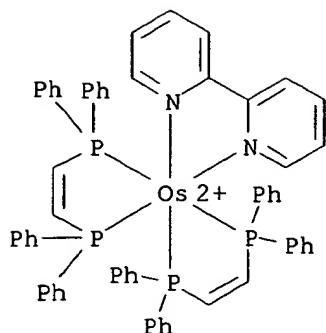
AB Bimol. energy transfer quenching of the metal-to-ligand-charge-transfer (MLCT) excited states of a series of 2,2'-bipyridine (bpy) complexes of OsII by anthracene or 2,3-benzanthracene (tetracene) has been studied in 3:1 (vol./vol.) acetonitrile-benzene at room temp. Energy transfer rate consts. (kq) vary from 6.3 .times. 10<sup>7</sup> to 5.1 .times. 10<sup>9</sup> M<sup>-1</sup> s<sup>-1</sup>, which is below the diffusion-controlled limit of 9.1 .times. 10<sup>9</sup> M<sup>-1</sup> s<sup>-1</sup>. For anthracene and the first triplet state (T1) of 2,3-benzanthracene, kq reaches a max. at a driving force (-.DELTA.G .degree.) of +0.52 eV. With a further increase in -.DELTA.G .degree., kq decreases, falling as low as 3.2 .times. 10<sup>8</sup> M<sup>-1</sup> s<sup>-1</sup> with 2,3-benzanthracene as quencher, consistent with inverted behavior. Energy transfer occurs via the triplet-triplet exchange (Dexter) mechanism. There is evidence for quenching by the second triplet state of 2,3-benzanthracene (T2) at even higher driving force. Application of a Franck-Condon anal. to the emission spectral profiles of the complexes and phosphorescence from anthracene has provided kinetic parameters for calcg. relative energy transfer rate consts. based on the usual Golden Rule result. When combined with an appropriate quenching model (including T2 for 2,3-benzanthracene), it is possible to account for the driving force dependence of kq quant., thus demonstrating the use of spectral fitting parameters to calc. relative rate consts. for energy transfer. On the basis of this anal. and comparison between exptl. and calcd. kq values, V1 = 2.5 cm<sup>-1</sup> for quenching by anthracene and T1 of 2,3-benzanthracene, and V2 = 8 cm<sup>-1</sup> for quenching by T2 of 2,3-benzanthracene.

IT 89711-31-9

RL: PEP (Physical, engineering or chemical process); PROC (Process)  
(energy transfer quenching of metal-to-ligand-charge-transfer  
(MLCT) excited states of)

RN 89711-31-9 HCAPLUS

CN Osmium(2+), (2,2'-bipyridine-N,N')bis[1,2-ethenediylbis[diphenylphosphine]-P,P']-, (OC-6-21)- (9CI) (CA INDEX NAME)



L44 ANSWER 28 OF 43 HCAPLUS COPYRIGHT 2002 ACS  
 ACCESSION NUMBER: 1994:101282 HCAPLUS  
 DOCUMENT NUMBER: 120:101282  
 TITLE: Fluorescent energy transfer immunoassay  
 INVENTOR(S): Lakowicz, Joseph; Maliwal, Badri; Thompson, Richard;  
 Ozinskas, Alvydas  
 PATENT ASSIGNEE(S): University of Maryland, USA  
 SOURCE: Eur. Pat. Appl., 26 pp.  
 CODEN: EPXXDW  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 552108	A2	19930721	EP 1993-400091	19930115
EP 552108	A3	19930922		
R: DE, FR, GB, IT				
CA 2087413	AA	19930718	CA 1993-2087413	19930115
JP 06066802	A2	19940311	JP 1993-6057	19930118
US 5631169	A	19970520	US 1994-183238	19940119
			US 1992-822233	19920117

PRIORITY APPLN. INFO.:

AB A photoluminometric immunoassay comprises reacting 2 immunoreactants, 1 labeled with a photoluminescent energy transfer **donor** capable of photoluminescence and the other labeled with a photoluminescent energy transfer **acceptor** complementary to the **donor**; exciting the sample with radiation; and calcg. the apparent luminescence lifetime to det. the presence of a reaction product. Studies were done using goat anti-mouse IgG labeled with the **donor** dichlorotriazinylaminofluorescein and mouse IgG labeled with the **acceptor** tetramethylrhodamine isothiocyanate.

L44 ANSWER 29 OF 43 HCAPLUS COPYRIGHT 2002 ACS  
 ACCESSION NUMBER: 1994:100946 HCAPLUS  
 DOCUMENT NUMBER: 120:100946  
 TITLE: Long-range photoinduced electron transfer through a DNA helix  
 AUTHOR(S): Murphy, C. J.; Arkin, M. R.; Jenkins, Y.; Ghatlia, N. D.; Bossmann, S. H.; Turro, N. J.; Barton, J. K.  
 CORPORATE SOURCE: Beckman Inst., California Inst. Technol., Pasadena, CA, 91125, USA

SOURCE: Science (Washington, DC, United States) (1993),  
262(5136), 1025-9  
CODEN: SCIEAS; ISSN: 0036-8075

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Rapid photoinduced electron transfer is demonstrated over a distance of >40 angstroms between metallointercalators that are tethered to the 5' termini of a 15-base-pair DNA duplex. An oligomeric assembly was synthesized in which the **donor** is Ru(phen)2dppz2+ (phen, phenanthroline, and dppz, dipyridophenazine) and the **acceptor** is Rh(phi)2phen3+ (phi, phenanthrenequinone diimine). These metal complexes are intercalated either one or two base steps in from the helix termini. Although the Ru-modified oligonucleotide hybridized to an unmodified complement luminesces intensely, the Ru-modified oligomer hybridized to the Rh-modified oligomer shows no detectable luminescence. Time-resolved studies point to a lower limit of 109 per s for the quenching rate. No quenching was obsd. upon metalation of 2 complementary octamers by Ru(phen)32+ and Rh(phen)33+ under conditions where the phen complexes do not intercalate. The stacked arom. heterocycles of the DNA duplex therefore serve as an efficient medium for coupling electron **donors** and **acceptors** over very long distances.

IT 152204-36-9

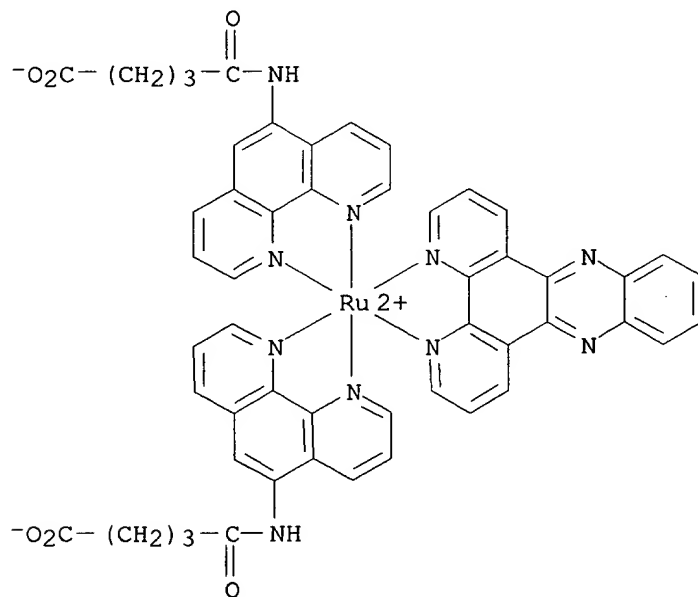
RL: ANST (Analytical study)

(electron **donor**, intercalated in DNA helix, for photoinduced electron transfer)

RN 152204-36-9 HCAPLUS

CN Ruthenium, (dipyrido[3,2-a:2',3'-c]phenazine-.kappa.N4,.kappa.N5)bis[5-oxo-5-[(1,10-phenanthrolin-5-yl-.kappa.N1,.kappa.N10)amino]pentanoato]-, conjugate diacid, (OC-6-22)- (9CI) (CA INDEX NAME)

PAGE 1-A





PAGE 2-A

2 H<sup>+</sup>

L44 ANSWER 30 OF 43 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1992:231064 HCAPLUS

DOCUMENT NUMBER: 116:231064

TITLE: Energy transfer within oligonucleotides from a lumazine (pteridine-2,4(1H,3H)-dione) chromophore to bathophenanthroline-ruthenium(II) complexes

AUTHOR(S): Bannwarth, Willi; Pfleiderer, Wolfgang; Mueller, Francis

CORPORATE SOURCE: F. Hoffmann-La Roche Ltd., Basel, CH-4002, Switz.

SOURCE: Helvetica Chimica Acta (1991), 74(8), 1991-9

CODEN: HCACAV; ISSN: 0018-019X

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The chem. insertion of 1-(2'-deoxy-.beta.-D-ribofuranosyl)-6,7-dimethyllumazine and of a bathophenanthroline-ruthenium(II) complex into synthetic oligodeoxynucleotides is described. This combination represents a new energy-transfer system with the lumazine chromophore as **donor** and the Ru complex as **acceptor** within the nucleotide. The system can be measured by time-resolved fluorometry or by lifetime measurements of the lumazine fluorescence and bears the potential of a spectroscopic ruler.

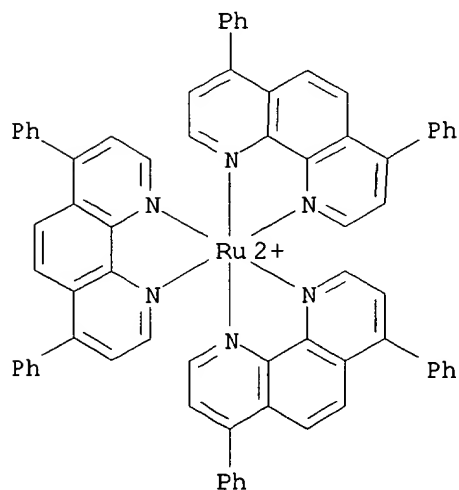
IT 63373-04-6

RL: ANST (Analytical study)

(as **acceptor**, in energy transfer system with lumazine chromophore as **donor**, in oligonucleotides)

RN 63373-04-6 HCAPLUS

CN Ruthenium(2+), tris(4,7-diphenyl-1,10-phenanthroline-.kappa.N1,.kappa.N10)-, (OC-6-11)- (9CI) (CA INDEX NAME)



L44 ANSWER 31 OF 43 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1991:554514 HCAPLUS  
 DOCUMENT NUMBER: 115:154514  
 TITLE: Method using two complementary specific binding pairs (sbp) for heterogeneous immunoassays  
 INVENTOR(S): Ullman, Edwin F.; Kirakossian, Hrair; Ericson, Mary C.; Watts, Richard P.  
 PATENT ASSIGNEE(S): Syntex (U.S.A.), Inc., USA  
 SOURCE: Eur. Pat. Appl., 22 pp.  
 CODEN: EPXXDW  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 411945	A2	19910206	EP 1990-308528	19900802
EP 411945	A3	19910612		
EP 411945	B1	19961030		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE				
US 5512659	A	19960430	US 1989-389659	19890804
CA 2022517	AA	19910205	CA 1990-2022517	19900802
AT 144838	E	19961115	AT 1990-308528	19900802
ES 2093634	T3	19970101	ES 1990-308528	19900802
JP 03206960	A2	19910910	JP 1990-206628	19900803
JP 2952013	B2	19990920		

PRIORITY APPLN. INFO.: US 1989-389659 19890804

AB A method of heterogeneous immunoassay uses 2 sbp's (e.g. antibody-antigen and biotin-avidin) in which (1) a member of each of the sbp's is conjugated with a small mol., i.e. an org. or organometallic group, wherein the small mol. of each conjugate is different; (2) the other member of the first sbp is labeled; and (3) the other member of the second sbp is immobilized on a support. The immunoassay is used for detecting antigen, antibody, and hapten. Thus, digoxin was sep. labeled with horseradish peroxidase (HRP) through a succinyloxybis(ethylamide) bridge and conjugated with 6-carboxyfluorescein by reacting digoxin carboxymethyl oxime with a reaction product of 3,3'-diamino-N-methyldipropylamine (LC) and a reaction product of N-hydroxysuccinimide (NHS) and 6-carboxyfluorescein; monoclonal anti-fluorescein antibody was raised and conjugated with HRP; anti-digoxin antibodies were attached to biotin through a LC-NHS linkage; and avidin was immobilized on glass beads for digoxin detn.

L44 ANSWER 32 OF 43 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1991:435999 HCAPLUS  
 DOCUMENT NUMBER: 115:35999  
 TITLE: Energy transfer in the "inverted region"  
 AUTHOR(S): Murtaza, Zakir; Zipp, Arden P.; Worl, Laura A.; Graff, Darla; Jones, Wayne E., Jr.; Bates, W. Doug; Meyer, Thomas J.  
 CORPORATE SOURCE: Dep. Chem., Univ. North Carolina, Chapel Hill, NC, 27599-3290, USA  
 SOURCE: Journal of the American Chemical Society (1991), 113(13), 5113-14  
 CODEN: JACSAT; ISSN: 0002-7863  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

AB Rate consts. have been measured in 1:3 (V:V) CH<sub>3</sub>CN-benzene at 298 .+- . K for quenching the MLCT (metal to ligand **charge** transfer) excited states of a series of polypyridyl complexes of OsII by energy transfer to anthracene or 2,3-benzanthracene (tetracene). The free energy changes, .DELTA.G.degree., fall in the range +0.12 to -1.3 eV. For 2,3-benzanthracene the Linverted region" was reached where k<sub>q</sub> decreases as .DELTA.G.degree. becomes more favorable with a limiting rate const. (2.0 .times. 10<sup>8</sup> M<sup>-1</sup> s<sup>-1</sup>) well below the diffusion-controlled limit. As -.DELTA.G.degree. is increased further, k<sub>q</sub> increases, apparently through quenching by the second triplet excited state of 2,3-benzeanthracene. The results of emission spectral fitting have been used to calc. vibrational overlap factors for energy transfer to anthracene. When combined with the appropriate quenching scheme, they provide a quant. basis for accounting for the variation of log k<sub>q</sub> with .DELTA.G.degree. for anthracene as the **acceptor**.

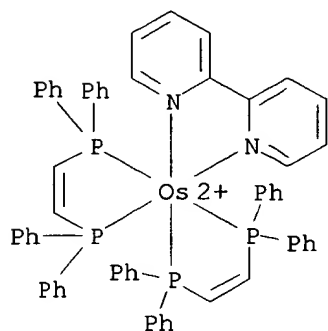
IT 89711-31-9

RL: PRP (Properties)

(energy transfer from, to anthracene and tetracene)

RN 89711-31-9 HCAPLUS

CN Osmium(2+), (2,2'-bipyridine-N,N')bis[1,2-ethenediylbis[diphenylphosphine]-P,P']-, (OC-6-21)- (9CI) (CA INDEX NAME)



L44 ANSWER 33 OF 43 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1990:511969 HCAPLUS

DOCUMENT NUMBER: 113:111969

TITLE: Enzyme-controlled-release system using a quinone-methide elimination reaction mechanism for use in immunoassays and pharmaceuticals

INVENTOR(S): Meneghini, Frank A.; Palumbo, Paul S.

PATENT ASSIGNEE(S): Polaroid Corp., USA

SOURCE: PCT Int. Appl., 34 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9001558	A1	19900222	WO 1989-US1696	19890420
W: JP				

RW: DE, FR, GB, IT, NL  
 US 5112739 A 19920512 US 1988-227141 19880802  
 EP 396642 A1 19901114 EP 1989-907960 19890420  
 EP 396642 B1 19940511  
 R: DE, FR, GB, IT, NL  
 JP 03500367 T2 19910131 JP 1989-507309 19890420  
 CA 1336586 A1 19950808 CA 1989-598563 19890503  
 PRIORITY APPLN. INFO.: US 1988-227141 19880802  
 WO 1989-US1696 19890420

OTHER SOURCE(S): MARPAT 113:111969

AB An enzyme-controlled-release system uses compd. I (R, R1, R2, R3 = H, substituent affecting the mobility or reactivity of the compd., or a substituent including a biol. active group; X = leaving group and may be an org., organometallic, or inorg. moiety; Z = enzyme substrate cleavable by an active enzyme; CR2R3X is either ortho or para to the OZ moiety). An active enzyme cleaves the substrate, Z; the resultant active intermediate undergoes a quinone-methide elimination reaction to release the leaving group X. The system is useful for detecting an analyte of interest and may be used in, e.g., immunoassays, enzyme amplification systems, and the release of pharmacol. active ligands. (4-Resorufinylmethyl-2-nitrophenyl)-2,3,4,6-tetra-O-acetyl-.beta.-D-galactopyranoside was prepd. by heating a soln. of (4-chloromethyl-2-nitrophenyl)-2,3,4,6-tetra-O-acetyl-.beta.-D-galactopyranoside (prepn. given), Na resorufin, and a catalytic amt. of NaI in dry DMF at 70.degree. for 4 h. The galactosyl acetate protecting groups were removed with NaOMe. When the galactopyranoside was treated with .beta.-galactosidase, the leaving group release rate was 0.25 (compared with 1.0 for o-nitrophenolgalactoside).

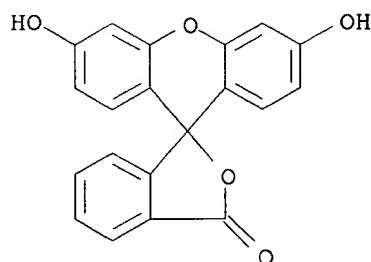
IT 2321-07-5, Fluorescein 2321-07-5D, Fluorescein, derivs.

RL: ANST (Analytical study)

(enzyme-controlled-release compd. contg., quinone-methide elimination in, for immunochem. anal.)

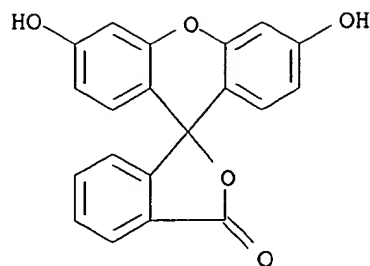
RN 2321-07-5 HCAPLUS

CN Spiro[isobenzofuran-1(3H),9'-[9H]xanthen]-3-one, 3',6'-dihydroxy- (9CI)  
 (CA INDEX NAME)



RN 2321-07-5 HCAPLUS

CN Spiro[isobenzofuran-1(3H),9'-[9H]xanthen]-3-one, 3',6'-dihydroxy- (9CI)  
 (CA INDEX NAME)



L44 ANSWER 34 OF 43 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1989:182058 HCAPLUS

DOCUMENT NUMBER: 110:182058

TITLE: Excited-state chiral discrimination observed by time-resolved circularly polarized luminescence measurements

AUTHOR(S): Metcalf, David H.; Snyder, Seth W.; Wu, Shuguang; Hilmes, Gary L.; Riehl, James P.; Demas, J. N.; Richardson, F. S.

CORPORATE SOURCE: Chem. Dep., Univ. Virginia, Charlottesville, VA, 22901, USA

SOURCE: J. Am. Chem. Soc. (1989), 111(8), 3082-3  
CODEN: JACSAT; ISSN: 0002-7863

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Time-resolved circularly polarized luminescence (TR-CPL) measurements were used to monitor chiral discrimination in intermol. energy-transfer processes between chiral (but racemic) **donor** mols. and chiral (enantiomerically resolved) **acceptor** mols. in aq. soln. The structures of both the **donor**, Tb(dpa)3<sup>3-</sup> (dpa = dipicolinate), and the **acceptor**, Ru(phen)3<sup>2+</sup> (phen = 1,10-phenanthroline), have trigonal dihedral (D3) symmetry and each has either left-handed (.LAMBDA.) or right-handed (.DELTA.) configurational chirality about the metal ion. The use of TR-CPL, allowed the monitoring of the excited-state optical activity as a function of time. The CPL obsd. from Tb3<sup>+</sup> in a soln. 10 mM in racemic Tb(dpa)3<sup>3-</sup> and 5 .mu.M in .LAMBDA.-Ru(phen)3<sup>2+</sup> was essentially zero at the time of the initial excitation of the Tb3<sup>+</sup>, and then increased to a dissymmetry value gem (=2(I<sub>L</sub>-I<sub>R</sub>)/I<sub>L</sub>+I<sub>R</sub>) of .apprx.0.1 at .apprx.10 ms later. CD measurements confirmed that the ground-state population of Tb(dpa)3<sup>3-</sup> is racemic. The excited-state population of Tb(dpa)3<sup>3-</sup> became chiral as a result of enantioselective quenching of 1 of the Tb(dpa)3<sup>3-</sup> enantiomers by the resolved Ru(phen)3<sup>2+</sup>. Rate consts. for the 2 quenching processes (.LAMBDA.-Tb-.LAMBDA.-Ru and .DELTA.-Tb-.LAMBDA.-Ru) are .apprx.1 .times. 10<sup>8</sup> and .apprx.2 .times. 10<sup>8</sup> M<sup>-1</sup> s<sup>-1</sup>.

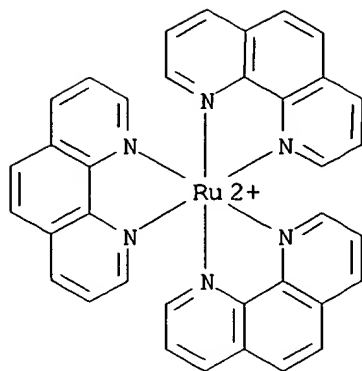
IT 24162-09-2

RL: PRP (Properties)

(luminescent study of energy transfer between chiral **donor** and)

RN 24162-09-2 HCAPLUS

CN Ruthenium(2+), tris(1,10-phenanthroline-.kappa.N1,.kappa.N10)-, (OC-6-11-.LAMBDA.)- (9CI) (CA INDEX NAME)



L44 ANSWER 35 OF 43 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1988:642953 HCAPLUS

DOCUMENT NUMBER: 109:242953

TITLE: Synthetic routes to new polypyridyl complexes of osmium(II)

AUTHOR(S): Kober, Edward M.; Caspar, Jonathan V.; Sullivan, B. Patrick; Meyer, Thomas J.

CORPORATE SOURCE: Dep. Chem., Univ. North Carolina, Chapel Hill, NC, 27514, USA

SOURCE: Inorg. Chem. (1988), 27(25), 4587-98  
CODEN: INOCAJ; ISSN: 0020-1669

DOCUMENT TYPE: Journal

LANGUAGE: English

AB New luminescent complexes of Os(II) that contain either 2,2'-bipyridine (bpy) or 1,10-phenanthroline (phen) as the chromophoric **acceptor** ligand were prepd. by a combination of established and new synthetic methods. Extensive use of Os(IV) and Os(III) precursors, e.g., OsIV(bpy)Cl<sub>4</sub> and mer-OsIII(PMe<sub>2</sub>Ph)Cl<sub>3</sub>, led to the prepn. of materials with ancillary ligands such as tertiary phosphines as preparative intermediates, including OsIII(bpy)(PMe<sub>2</sub>Ph)Cl<sub>3</sub> and cis-OsII(phen)LCl<sub>2</sub> (L = phosphines). Further substitution of Cl<sup>-</sup> into complexes such as these gave emissive Os(II) complexes. Another new synthetic route utilizes the versatile Os(II) precursor Os(bpy)<sub>2</sub>CO<sub>3</sub>, which allows the facile prepn. of dicationic, disubstituted species such as [Os(bpy)<sub>2</sub>(nor)]<sup>2+</sup> (nor = norbornadiene). Another general procedure, based on the control of solvent and temp. in the substitution chem. of cis-Os(bpy)<sub>2</sub>Cl<sub>2</sub>, was further developed to produce a variety of cis- [Os(bpy)<sub>2</sub>L<sub>1</sub>Cl]<sup>+</sup> and cis-[Os(bpy)<sub>2</sub>L<sub>1</sub>L<sub>2</sub>]<sup>2+</sup> (L<sub>1</sub> = phosphine, arsine, N-donor ligand or olefin). In a few cases, phosphine entering groups cause the cis geometry to be unfavorable and new trans-[Os(bpy)<sub>2</sub>L<sub>2</sub>]<sup>2+</sup> were isolated. Because a major emphasis of this work was to develop a wide variety of luminophors based on OsII-bpy polypyridine type chromophores, the resultant complexes comprise the largest family of transition-metal-bases excited-state reagents with tunable photophys. and redox properties available. When possible, the new complexes were characterized by UV-visible and emission spectroscopy, cyclic voltammetry and <sup>31</sup>P and/or <sup>1</sup>H NMR spectroscopy.

IT 116863-41-3 116863-42-4

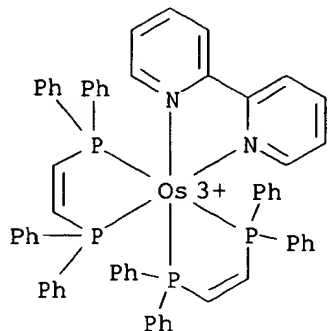
RL: PRP (Properties)

(elec. potential of couple contg.)

RN 116863-41-3 HCAPLUS

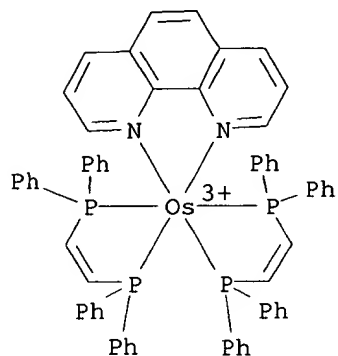
CN Osmium(3+), (2,2'-bipyridine-N,N')bis[1,2-ethenediylbis[diphenylphosphine]-

P,P']-, (OC-6-21)- (9CI) (CA INDEX NAME)



RN 116863-42-4 HCAPLUS

CN Osmium(3+), bis[1,2-ethenediylbis[diphenylphosphine]-P,P'] (1,10-phenanthroline-N1,N10)-, (OC-6-21)- (9CI) (CA INDEX NAME)



IT 116863-11-7P 116946-78-2P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. and electrochem. and spectral properties of)

RN 116863-11-7 HCAPLUS

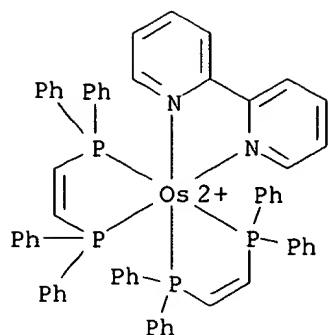
CN Osmium(2+), (2,2'-bipyridine-N,N')bis[1,2-ethenediylbis[diphenylphosphine]-P,P']-, (OC-6-21)-, bis[hexafluorophosphate(1-)] (9CI) (CA INDEX NAME)

CM 1

CRN 89711-31-9

CMF C62 H52 N2 Os P4

CCI CCS

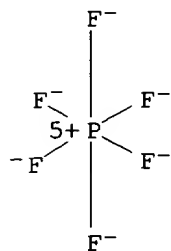


CM 2

CRN 16919-18-9

CMF F6 P

CCI CCS



RN 116946-78-2 HCAPLUS

CN Osmium(2+), bis[1,2-ethenediylbis[diphenylphosphine]-P,P'] (1,10-phenanthroline-N1,N10)-, (OC-6-21)-, bis[hexafluorophosphate(1-)] (9CI)  
(CA INDEX NAME)

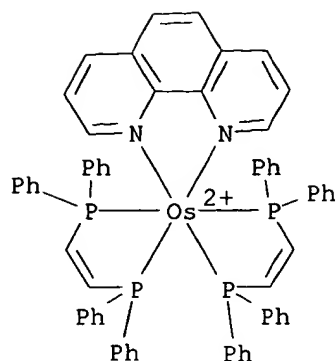
CM 1

CRN 116946-77-1

CMF C64 H52 N2 Os P4

CCI CCS



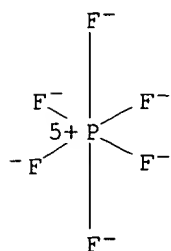


CM 2

CRN 16919-18-9

CMF F6 P

CCI CCS



L44 ANSWER 36 OF 43 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1988:507391 HCAPLUS

DOCUMENT NUMBER: 109:107391

TITLE: Electrochemiluminescent assays and kits using ruthenium and osmium bipyridyl complexes as labels

INVENTOR(S): Massey, Richard J.; Powell, Michael J.; Mied, Paul A.; Feng, Peter; Della, Ciana Leopoldo; Dressick, Walter J.; Poonian, Mohindar S.

PATENT ASSIGNEE(S): IGEN Inc., USA

SOURCE: PCT Int. Appl., 253 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 11

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 8706706	A1	19871105	WO 1987-US987	19870430
W: AU, DK, FI, JP, KR, NO, US				
RW: AT, BE, CH, DE, FR, GB, IT, LU, NL, SE				
AU 8775816	A1	19871124	AU 1987-75816	19870430

AU 605158	B2	19910110		
EP 265519	A1	19880504	EP 1987-904151	19870430
EP 265519	B1	19950913		
R: AT, BE, CH, DE, FR, GB, IT, LI, LU, NL, SE				
JP 01500146	T2	19890119	JP 1987-503860	19870430
JP 07037464	B4	19950426		
EP 647849	A2	19950412	EP 1994-120254	19870430
EP 647849	A3	19960515		
R: AT, BE, CH, DE, FR, GB, IT, LI, LU, NL, SE				
EP 658564	A1	19950621	EP 1994-120516	19870430
EP 658564	B1	20020116		
R: AT, BE, CH, DE, FR, GB, IT, LI, LU, NL, SE				
JP 09118688	A2	19970506	JP 1996-166280	19870430
CA 1339465	A1	19970916	CA 1987-536079	19870430
JP 11101800	A2	19990413	JP 1998-190615	19870430
AT 212030	E	20020215	AT 1994-120516	19870430
IL 101990	A1	19980104	IL 1987-101990	19870501
IL 110557	A1	19980104	IL 1987-110557	19870501
IL 119484	A1	19990411	IL 1987-119484	19870501
IL 119895	A1	20010319	IL 1987-119895	19870501
FI 8705732	A	19871228	FI 1987-5732	19871228
NO 8705476	A	19880223	NO 1987-5476	19871229
NO 176071	B	19941017		
NO 176071	C	19950125		
DK 8706897	A	19880225	DK 1987-6897	19871229
DK 172940	B1	19991011		
AU 9174338	A1	19910808	AU 1991-74338	19910410
AU 644150	B2	19931202		
DK 9300162	A	19930212	DK 1993-162	19930212
DK 173025	B1	19991115		
US 5635347	A	19970603	US 1994-188943	19940128
AU 9457540	A1	19940512	AU 1994-57540	19940302
AU 685071	B2	19980115		
US 5591581	A	19970107	US 1994-227898	19940415
JP 07309836	A2	19951128	JP 1994-251174	19940908
JP 07267972	A2	19951017	JP 1994-275174	19941109
US 5770459	A	19980623	US 1994-348749	19941201
US 5716781	A	19980210	US 1995-470247	19950606
US 5811236	A	19980922	US 1995-468524	19950606
US 5846485	A	19981208	US 1995-465928	19950606
US 6271041	B1	20010807	US 1995-467936	19950606
US 6451225	B1	20020917	US 1995-467232	19950606
US 6316607	B1	20011113	US 1995-472425	19950607
PRIORITY APPLN. INFO.:				
			US 1986-858354	A2 19860430
			EP 1987-904151	A3 19870430
			JP 1994-251174	A3 19870430
			WO 1987-US987	A 19870430
			IL 1987-101990	A3 19870501
			IL 1987-110557	A3 19870501
			IL 1987-82411	A3 19870501
			US 1987-117017	B2 19871104
			US 1987-369560	A2 19871218
			US 1988-188258	B1 19880429
			US 1988-266882	B1 19881103
			US 1988-266914	B1 19881103
			US 1990-533931	B1 19900605
			US 1990-539389	B2 19900618

US 1990-570226	B1 19900821
US 1991-652427	B2 19910206
US 1991-728093	B1 19910710
US 1991-773971	A2 19910927
US 1991-792602	B1 19911115
US 1994-195825	B3 19940210
US 1994-196315	A3 19940415
US 1994-227898	A3 19940415
JP 1994-275174	A3 19941109
US 1995-415756	B3 19950403

AB An analyte is detected by combining it with a reagent which repeatedly emits electromagnetic radiation upon exposure to a source of electrochem. energy, and detecting the electromagnetic radiation (electrochemiluminescence) emitted. This technique can also be used for competitive assays and for qual. anal. *Legionella micdadei* Cells were quantitated by a heterogeneous electrochemiluminescent immunoassay in which a suspension of cells was mixed with mouse monoclonal IgG antibody specific for *L. micdadei*, washed, and resuspended in rabbit anti-mouse IgG antibody labeled with 4,4'-bis(chloromethyl)-2,2'-bipyridyl bis(2,2'-bipyridyl) ruthenium (II) (I). After incubation, an aliquot was mixed with DMSO-H<sub>2</sub>O (1:1) contg. 0.1M NBu<sub>4</sub>BF<sub>4</sub> and 18mM (NH<sub>4</sub>)<sub>2</sub>S<sub>2</sub>O<sub>8</sub>. The electrochemiluminescence at 0, 9.3 .times. 108, and 1.9 .times. 109 cells/10mL was 0., 90, and 160 mV, resp. I-labeled rabbit anti-mouse IgG antibody was about 81% as effective as unlabeled rabbit anti-mouse IgG antibody in competing with enzyme-labeled anti-mouse IgG antibody for binding to mouse IgG. Bis(2,2'-bipyridyl) [4-butan-1-yl]-4'-methyl-2,2'-bipyridyl ruthenium (II) diperchlorate (II) was prepd. by reaction of 4,4'-dimethyl-2,2'-bipyridyl with LiBu and 2-(2-bromoethyl)-1,3-dioxolane, reaction of the product with Ru bipyridyl dichloride dihydrate, and addn. of concd. NaClO<sub>4</sub>.

L44 ANSWER 37 OF 43 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1987:111079 HCAPLUS

DOCUMENT NUMBER: 106:111079

TITLE: Factors affecting cage escape yields following electron-transfer quenching

AUTHOR(S): Olmsted, John, III; Meyer, Thomas J.

CORPORATE SOURCE: Dep. Chem. Biochem., California State Univ., Fullerton, CA, 92634, USA

SOURCE: J. Phys. Chem. (1987), 91(6), 1649-55

CODEN: JPCHAX; ISSN: 0022-3654

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The factors influencing the escape of **donor-acceptor charge-transfer** pairs from their solvent cage were examd., using methylviologen (MV<sup>2+</sup>) as the **acceptor** and several different excited metal complexes and arom. org. mols. as **donors**. The ratios of cage escape yields were detd. by measuring the amt. of transient absorption due to MV.bul.+ radical cation in the absence and in the presence of an anthracene deriv. as an energy shuttle, under conditions where no irreversible photochem. takes place. For a series of different Ru and Os complexes, the cage escape yield of the [M<sup>3+</sup>,MV.bul.+] pair varied only slightly, ranging from 0.14 to 0.27. When the **donor** was an org. triplet excited state (9-methylantracene or acridine yellow), the cage escape yield was near unity. Perturbation by heavy atoms reduced the yield to 0.3 (9-bromoanthracene in soln. contg. CH<sub>3</sub>I). The cage escape yield was strongly affected by the rate of triplet-singlet

interconversion of the triplet **charge** pair generated in the quenching event. When no mechanism for triplet-singlet mixing was present (org. **donors**), back-electron-transfer, which requires a spin change, was slow compared to diffusion out of the cage. When spin-orbit coupling was substantial (heavy-atom perturbation, transition-metal complexes), back-electron-transfer was competitive with diffusional cage escape.

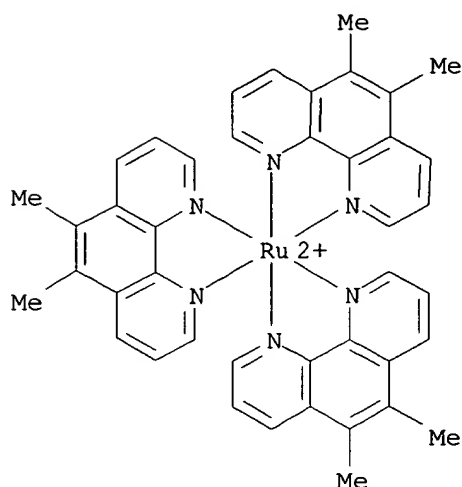
IT 14975-40-7

RL: USES (Uses)

(photolysis of system contg. methylviologen and arom. triplet **donor** and, electron-transfer quenching and solvent cage escape yields in)

RN 14975-40-7 HCAPLUS

CN Ruthenium(2+), tris(5,6-dimethyl-1,10-phenanthroline-.kappa.N1,.kappa.N10)-, (OC-6-11)- (9CI) (CA INDEX NAME)



L44 ANSWER 38 OF 43 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1987:101608 HCAPLUS

DOCUMENT NUMBER: 106:101608

TITLE: Photooxidation of tetraanionic sensitizer ions by dihexadecyl phosphate vesicle-bound viologens

AUTHOR(S): Hurst, James K.; Thompson, David H. P.; Connolly, John S.

CORPORATE SOURCE: Dep. Chem. Biol. Sci., Oregon Grad. Cent., Beaverton, OR, 97006-1999, USA

SOURCE: J. Am. Chem. Soc. (1987), 109(2), 507-15  
CODEN: JACSAT; ISSN: 0002-7863

DOCUMENT TYPE: Journal

LANGUAGE: English

AB UV indicates that the triplet lifetime shortening of photoredox-active anions by N-alkyl-N-methyl-4,4'-bipyridinium (I), in dihexadecyl phosphate (II) vesicles, involves a one-electron oxidative quenching mechanism. The overall quantum yield of **charge**-sepd. product ions in the reaction of I with 5,10,15,20-tetrakis(4-sulfonatophenyl)porphinatozinc(II) tetraanion (III) exceeds 0.5 redox pairs per absorbed photon. The yields in the reactions of I with tetrakis(diphosphito)diplatinate(II),

tris[4,7-bis(4-sulfonatobenzyl)-1,10-phenanthroline]ruthenate(II), or tris(4,4'-dicarboxylato-2,2'-bipyridine)ruthenate(II) are much less, due to their intrinsically shorter triplet lifetimes and poor cage escape yields. Product formation in the absence of II vesicles is negligible as extensive ion pairing of I with the sensitizers cause static quenching of the photoexcited states. The ionic strength dependence of the kinetics of triplet III oxidn by I-II particles suggests a diffusion-controlled mechanism with electron transfer over a sepn. distance approximating the hard-sphere collision diam. of III and I. Although the quenching rate consts. are detd. by the collision frequencies between vesicles and triplet III, an apparent concn. dependence on I is due to the variation of the effective dielec. const. at the reaction site with the extent of I loading. The recombination of the .pi.-cation of III with the radical cation of I follows mixed first- and second order kinetics; possible mechanisms are discussed.

IT 105857-36-1

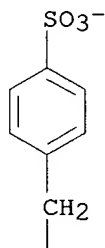
RL: PRP (Properties)

(triplet, quenching of, by vesicle-bound viologens, kinetics and mechanism of)

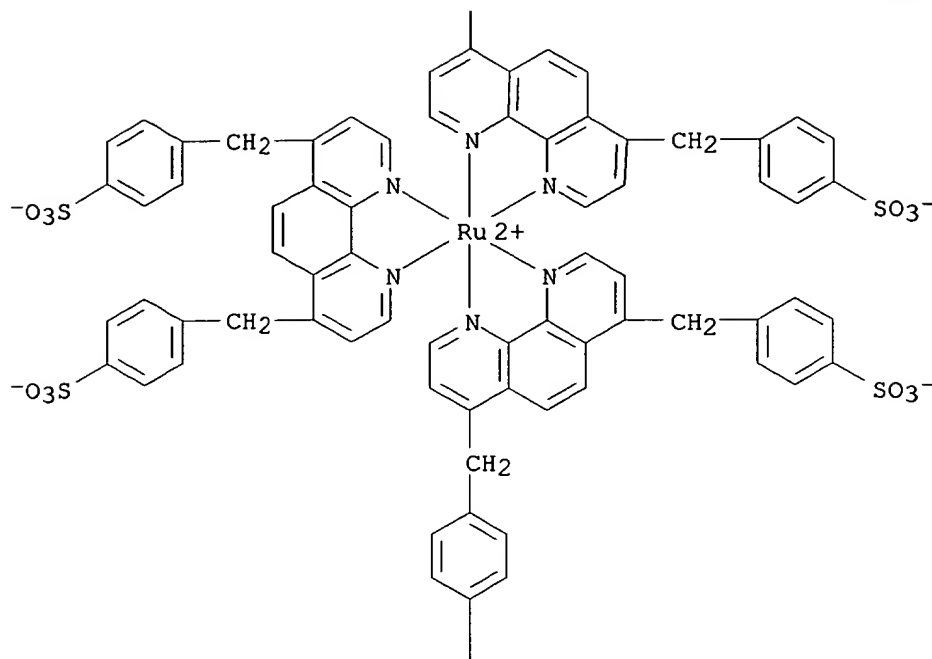
RN 105857-36-1 HCAPLUS

CN Ruthenate(4-), tris[[4,4'-[1,10-phenanthroline-4,7-diylbis(methylene)]bis[benzenesulfonato]](2-)-N,N']-, (OC-6-11)- (9CI)  
(CA INDEX NAME)

PAGE 1-A



PAGE 2-A



PAGE 3-A



L44 ANSWER 39 OF 43 HCAPLUS COPYRIGHT 2002 ACS  
 ACCESSION NUMBER: 1986:469380 HCAPLUS  
 DOCUMENT NUMBER: 105:69380  
 TITLE: Application of the energy gap law to excited-state decay of osmium(II)-polypyridine complexes: calculation of relative nonradiative decay rates from emission spectral profiles  
 AUTHOR(S): Kober, Edward M.; Caspar, Jonathan V.; Lumpkin, Richard S.; Meyer, Thomas J.  
 CORPORATE SOURCE: Dep. Chem., Univ. North Carolina, Chapel Hill, NC, 27514, USA  
 SOURCE: J. Phys. Chem. (1986), 90(16), 3722-34  
 CODEN: JPCHAX; ISSN: 0022-3654  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 AB The radiative (kr) and nonradiative (knr) decay rates of the metal-to-polypyridine **charge**-transfer excited states for an extended series of [OsII(bpy,phen)L4]n+ complexes are reported (bpy = 2,2'-bipyridine; phen = 1,10-phenanthroline; L = halides, N donors, phosphines, CO). Qual., kr varies. Eem3 is in accordance with the

Einstein law for spontaneous emission, and  $k_{nr}$  varies.  $\exp(-E_{em})$  is in accordance with the so-called energy gap law for radiationless decay in the weak coupling limit ( $E_{em}$  = room-temp. emission max.). The relative values of  $k_{nr}$  could be calcd. quant. by using the vibrational structure of the emission spectra to evaluate the requisite Franck-Condon factors. For this application, the energy gap law equation was derived in a form with the explicit inclusion of contributions from low-frequency modes; this form was recast in terms of spectral bandshape parameters where the vibrational structure of the low-frequency modes is not resolved. The quant. correlation definitively establishes that the dominant **acceptor** modes (those which accept the majority of the excited-state energy) are framework stretching modes of the polypyridine ligand with  $\nu_{max} \approx 1300 \text{ cm}^{-1}$  and not C-H stretching modes as is sometimes assumed. This is corroborated by the fact that deuteration of the bpy ligand has only a small effect upon the value of  $k_{nr}$ .

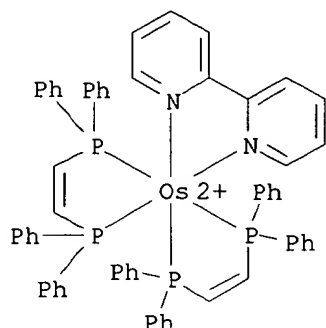
IT 89711-31-9 96964-80-6

RL: PRP (Properties)

(luminescence of, calcn. of energy gap law to excited state decay in)

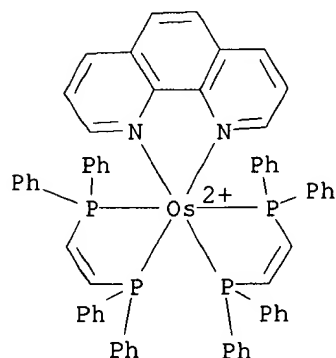
RN 89711-31-9 HCAPLUS

CN Osmium(2+), (2,2'-bipyridine-N,N')bis[1,2-ethenediylbis[diphenylphosphine]-P,P']-, (OC-6-21)- (9CI) (CA INDEX NAME)



RN 96964-80-6 HCAPLUS

CN Osmium(2+), bis[1,2-ethenediylbis[diphenylphosphine]-P,P'] (1,10-phenanthroline-N1,N10)-, (OC-6-22)- (9CI) (CA INDEX NAME)



L44 ANSWER 40 OF 43 HCAPLUS COPYRIGHT 2002 ACS  
 ACCESSION NUMBER: 1986:65411 HCAPLUS  
 DOCUMENT NUMBER: 104:65411  
 TITLE: Kits of reagents and methods for assaying a pair of  
 specific binding partners  
 INVENTOR(S): Forrest, Gordon Coulter; Rattle, Simon John; Robinson,  
 Grenville Arthur  
 PATENT ASSIGNEE(S): Serono Diagnostics Ltd., UK  
 SOURCE: Eur. Pat. Appl., 21 pp.  
 CODEN: EPXXDW  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 155135	A2	19850918	EP 1985-301497	19850305
EP 155135	A3	19890208		
EP 155135	B1	19920923		
R: BE, CH, DE, FR, GB, IT, LI, NL, SE				
IL 74487	A1	19901223	IL 1985-74487	19850303
CA 1255585	A1	19890613	CA 1985-475712	19850304
US 5077197	A	19911231	US 1985-707661	19850304
<del>AU 8539538</del>	A1	19850912	AU 1985-39538	19850305
AU 599886	B2	19900802		
ZA 8501654	A	19861029	ZA 1985-1654	19850305
PRIORITY APPLN. INFO.:		GB 1984-5691		19840305

AB A method for assaying biol. active substances (ligands) in body fluids comprises (a) a specific binding partner to the ligand; (b) a ligand analog and specific binding partner (c) .gtoreq.1 component of (a) or (b) labeled with an electron **donor** or electron-**acceptor**; (d) and detg. whether the transfer of electrons between the electron **donor acceptor** and a **charge** transfer partner is perturbed by ligand complex formation and(or) controlled by external influences. The transfer of electrons between the label and its partner on formation of a **charge** transfer complex may be measured elec. or spectrophotometrically. In particular, antigens or antibodies can be assayed by competitive or direct procedures by this method. The addn. of electron-**donor**-labeled antibody to a sample, followed by introduction of an electron **acceptor** surface gives a septem where the rate of formation of **charge** transfer complex is inversely related to the antigen concn. Alternatively, the antibody may be labeled with electron-**acceptor** and the **donor** provided as a surface for elec. measurements or a sep. reagent for colorimetric measurements.

L44 ANSWER 41 OF 43 HCAPLUS COPYRIGHT 2002 ACS  
 ACCESSION NUMBER: 1985:496151 HCAPLUS  
 DOCUMENT NUMBER: 103:96151  
 TITLE: Synthetic control of excited states. Nonchromophoric  
 ligand variations in polypyridyl complexes of  
 osmium(II)  
 AUTHOR(S): Kober, Edward M.; Marshall, Janet L.; Dressick, Walter  
 J.; Sullivan, B. Patrick; Caspar, Johnathan V.; Meyer,  
 Thomas J.



CORPORATE SOURCE: Dep. Chem., Univ. North Carolina, Chapel Hill, NC,  
27514, USA  
SOURCE: Inorg. Chem. (1985), 24(18), 2755-63  
CODEN: INOCAJ; ISSN: 0020-1669  
DOCUMENT TYPE: Journal  
LANGUAGE: English

AB Metal-to-ligand **charge** transfer (MLCT) excited states of a series of Os(II) complexes underwent facile oxidative or reductive quenching. Excited-state redox potentials were estd. for excited state oxidative and reductive couples by both kinetic quenching and spectroscopic techniques. In a series of (phen)OsL<sub>2</sub><sup>2+</sup> (phen = 1,10-phenanthroline; L = pyridine, MeCN, phosphine, arsine) where the metal-ligand basis for the MLCT chromophore remains the same and variations are made in the nonchromophoric ligand, emission energies, excited-state redox potentials, and radiative and nonradiative rate consts. varied systematically with the potential of the ground-state Os(III/II) couple.

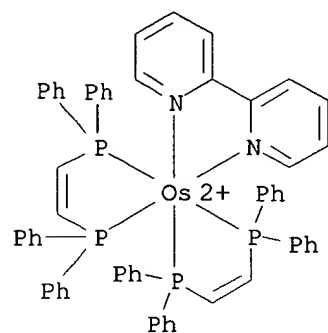
IT 89711-31-9 96964-80-6

RL: USES (Uses)

(photolysis and spectroscopic and excited-state properties of, excited- and ground-state redox potentials for)

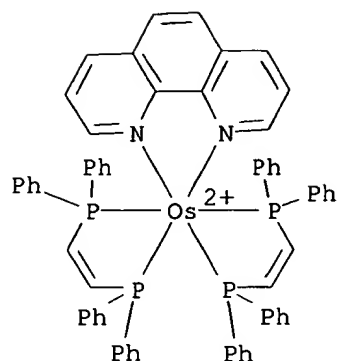
RN 89711-31-9 HCAPLUS

CN Osmium(2+), (2,2'-bipyridine-N,N')bis[1,2-ethenediylbis[diphenylphosphine]-P,P']-, (OC-6-21)- (9CI) (CA INDEX NAME)



RN 96964-80-6 HCAPLUS

CN Osmium(2+), bis[1,2-ethenediylbis[diphenylphosphine]-P,P'] (1,10-phenanthroline-N1,N10)-, (OC-6-22)- (9CI) (CA INDEX NAME)



L44 ANSWER (42) OF 43 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1984:218133 HCAPLUS

DOCUMENT NUMBER: 100:218133

TITLE: Molecular and electronic structure in the metal-to-ligand **charge**-transfer excited states of d6 transition-metal complexes in solution

AUTHOR(S): Caspar, Jonathan V.; Westmoreland, T. David; Allen, George H.; Bradley, Paul G.; Meyer, Thomas J.; Woodruff, William H.

CORPORATE SOURCE: Dep. Chem., Univ. North Carolina, Chapel Hill, NC, 27514, USA

SOURCE: J. Am. Chem. Soc. (1984), 106(12), 3492-500  
CODEN: JACSAT; ISSN: 0002-7863

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The ground and metal-to-ligand (MLCT) excited electronic states of the complexes  $\text{Os}(\text{bpy})_n(\text{P}2)_3-n^{2+}$  ( $\text{bpy} = 2,2'$ -bipyridine,  $\text{P}2 = \text{cis-Ph}_2\text{PCH}_2\text{CHPh}_2$ ;  $n = 1-3$ ) were studied by resonance Raman spectroscopy, time-resolved resonance Raman spectroscopy (TR3) and emission spectroscopy. The time-resolved resonance Raman TR3 evidence confirms that the **charge**-transfer electron d. is localized in the lowest  $\pi^*$  orbital of one bpy ligand rather than delocalized over the  $\pi^*$  orbitals of all of the available bpy ligands on the vibrational time scale. The amt. of **charge** transferred from the metal to bpy  $\pi^*$  in the MLCT state was detd. Application of Badger's rule to the Raman data and Franck-Condon anal. of the emission data lead to 2 independent detns. of av. bond length displacements in the MLCT state. The 2 approaches yield displacement values that agree within 0.001-0.003  $\text{\AA}$ . for the 3 complexes studied, suggesting that it may be possible to det. excited-state structures in soln. with a precision similar to that of a good x-ray crystal structure. Anal. of time-resolved resonance Raman TR3 and emission data for  $\text{Ru}(\text{bpy})_3^{2+}$ ,  $\text{Ru}(\text{Bpy})_2(\text{en})^{2+}$ , and  $\text{fac-Re}(\text{bpy})(\text{CO})_3\text{Cl}$  by these methods yields results in agreement with the Os data. The results suggest a general prescription for the detn. of the mol. and electronic structures of electronically excited states in soln.

IT 89711-31-9

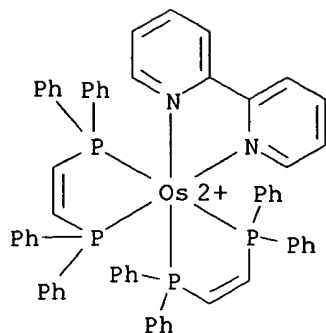
RL: PRP (Properties)

(electronic and mol. structure of metal-to-ligand **charge**-transfer excited states of)

RN 89711-31-9 HCAPLUS

CN Osmium(2+), (2,2'-bipyridine-N,N')bis[1,2-ethenediylbis[diphenylphosphine]]-

P,P']-, (OC-6-21)- (9CI) (CA INDEX NAME)



L44 ANSWER **43** OF 43 HCAPLUS COPYRIGHT 2002 ACS  
 ACCESSION NUMBER: 1980:61792 HCAPLUS  
 DOCUMENT NUMBER: 92:61792  
 TITLE: Hydrogen and a rhodium coordination complex  
 INVENTOR(S): Lehn, Jean Marie; Sauvage, Jean Pierre  
 PATENT ASSIGNEE(S): Agence Nationale de Valorisation de la Recherche, Fr.  
 SOURCE: Fr. Demande, 11 pp.  
 CODEN: FRXXBL  
 DOCUMENT TYPE: Patent  
 LANGUAGE: French  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
FR 2409262	A1	19790615	FR 1977-34690	19771118
FR 2409262	B1	19810213		

AB H is photochem. prepd. from H<sub>2</sub>O or a hydroorg. compd. (e.g., alcs.) by irradiation at 350-650 nm in the presence of a photosensitizer, the tris(2,2'-bipyridine)ruthenium(2+) [15158-62-0] or tris(1,10-phenanthroline)ruthenium(2+) [22873-66-1] complex; the tris(2,2'-bipyridine)rhodium(3+) [47780-17-6] complex; an electron donor, triethanolamine [102-71-6] or N-ethylmorpholine [100-74-3]; and K<sub>2</sub>PtCl<sub>4</sub>.